AMERICAN VETERINARY REVIEW.

NOVEMBER, 1914.

EDITORIAL.

EUROPEAN CHRONICLES.

"La Mare aux Cerfs,"
Bois Jerome par Vernon, Eure.
September 15, 1914.

THE WAR AND THE PROFESSION.—I do not suppose that my readers will, by this title, fancy that I am going to entertain them at length with the effects of the terrible ordeal of events, through which the whole of Europe is passing and in which several millions of human beings are facing each other ready for destruction.

To do this, would be an improper task, and the REVIEW is no place to discuss what is going on. War with all its horrors is raging, let us hope for an early lasting peace!

With this exception, I may be allowed to consider a few professional facts relating indirectly to the war or resulting from it.

First of all comes the *International Veterinary Congress.* Through the REVIEW, I am sure, almost all that was interesting in connection with this grand festival is already known. Perhaps our friends are acquainted with the request made by the French committee to postpone the congress, when the gathering of war clouds took place. The committee of England did not accept the suggestion from France, and the result was a "hard hit to the veterinary profession," as says the *Veterinary News*, viz.: a collapse. Opened in the morning, the congress adjourned the same day. So I heard through private information.

It was indeed a hard hit, if one takes into consideration the very peculiar position in which so many veterinarians were placed; the enormous expenses they had made, the long journeys that were traveled, the terrible difficulties to return home, etc., etc.—and after that, no congress.

So far I have found no allusion to this collapse in the veterinary papers of England, down to the date of August 15, except the *News*. Perhaps later will we have some echoes of the affair.

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The *Veterinary Journal,* however, in its August issue, had prepared a handsome souvenir, with which our friend, Prof. Hobday, devoting the whole number to the congress, to whose members, British and foreign, the *Journal* extended a hearty welcome.

Presenting first a beautiful photo of the patron of the tenth international veterinary congress, His Most Gracious Majesty King George V, Prof. Hobday then gives the history of the foundation of those international professional gatherings, and illustrates it by a likeness of its foundator, Professor John Gamgee. I had the honor of being an intimate friend of the celebrated English veterinarian and received from him his photograph, which, with many others, I gave to the Museum of Veterinary Medicine in Lyons.

The souvenir then goes on with the illustration of a group taken at the first international congress and then with the likenesses of the president of the tenth gathering, the Right Hon. Walter Runciman, P.C.P.P.; that of the well-known veteran of our profession, Dr. Lydlin; of Sir John McFadyean, M.B., C.M., M.B.Sc., M.R.C.V.S., LL.D., F.R.S.E.; the president of the organizing committee of the congress; of Prof. A. Degive, the learned veterinarian of Belgium; of Prof. Stefan von Ratz; of Sir Stewart Stockman, M.R.C.V.S.; of Dr. Sir Arnold Theiler, K.C.M.G., the world-known director of veterinary research at Pretoria, South Africa; of Mr. F. Garnett, J.P., M.R.C.V.S.; of Dr. D. A. de Jong, extraordinary professor at the University of

Leyden; of Dr. W. C. Shimmel, of Utrecht; of Prof. Chauveau, of France; of Prof. E. Hess, of Berne; of Prof. A. Binder, of Vienna; of Dr. E. Perroncito, of Turin; of Dr. O. Malm, of Christiania; of Prof. Dr. Ellenberger, of Dresden; of Prof. Lignières, of Buenos Ayres; of Prof. Dr. Schmaltz, of Berlin, the anatomist known all over the world; of Major General Robert Pringle, C.B., D.S.O., F.R.C.V.S., Director General of the British Army Veterinary service; of Prof. G. Marcone, of Pisa; of Prof. A. Locusteanu, of Bucharest; of Prof. Dr. B. Bang, of Copenhagen; of Prof. A. Lanfranchi, of Parma; of Herr Schmidt, of Denmark; of Prof. W. L. Williams, of Cornell University; of John G. Rutherford, C.M.G., Canada.

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This handsome album contains besides, interesting records showing the progress of veterinary medicine in various countries. Sending to all veterinarians the likenesses of all those celebrities in our profession who, as officers of the tenth international veterinary congress, many of which intended to be speakers in the different meetings in London, this souvenir of Professor Hobday will prove an agreeable compensation to the collapse that closed the exercises of Monday, the 3d of August, 1914, for which every one will be thankful.

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Sundry War Effects.—Without desiring to enter into the effects of the terrific struggle now raging through continental Europe, I may mention one which, I believe, is unique, because of the wide extent in which it prevails. I mean the effect that the belligerent action is imposing upon the *press*—the press in general and also the scientific one. That the enlisting of typographs and the possible famine of paper for printing should oblige a reduced size and number of journals, were among the expected

and temporary results. But that scientific publications should feel the need or be obliged, for the time being, to stop or reduce their issues, is a *fact* heretofore unknown, I believe. Veterinary journals are amongst those publications. The *Veterinary News*, our well-known contemporary of England, writes in an editorial notice: "Our readers will note that, following what is now a general custom in the newspaper world, we have been compelled, owing to the shortage of paper supply, temporarily to reduce the size of the *Veterinary News*."

Its interesting numbers lately have been reduced.

And again the publishers of the *Recueil* in a private letter informs me that this old French journal and the bulletins that go with it monthly, will be stopped until the end of the war, when in one number everything that was retained will be printed.

My work of monthly European chronicles, my reviews, will suffer by the absence of those professional journals, and I beg our readers to appreciate the difficulties of this case of *force majeure;* and I assure them that I will endeavor to resume my work as early and as completely as possible. I may be a little concise for the present, but that will be only for a short time.

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In direct relation to veterinarians there are a few points which, I take it, may be interesting.

Professor Vallee, the director of Alfort, writes me: "The school has been the headquarters used for 15,000 men and stabling 3,000 horses." This is quite a changed condition and appearance of the school from what it was when our American friends visited it last summer.

Professor F. Hobday has published a letter endorsing an *Urgent Call for Veterinary Surgeons*, where he said: "Great Britain is in absolute need of veterinary surgeons, and the Army in particular calls *at this moment* for their services."

To conclude these little items of news, I cite this from a daily

paper: "In the last engagement in Alsace a veterinarian was made a prisoner. The nationality was not given."

Let us hope that this sad petty news, will soon be replaced by the proclamation of a long and lasting peace.

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BIBLIOGRAPHY.—*Precis de Microbiologie des Maladies Infectieuses des Animaux Domestiques* (*Treatise of Microbiology of the Infectious Diseases of Domestic Animals*), by Professors J. Courmont, of the Faculty of Medicine of Lyons, and L. Panisset, of the veterinary school of the same city. Published by G. Doin & Sons, Place de l'Odeon, Paris.

This is an excellent work, which is written by two masters of the science of microbiology; a work which will fill in French veterinary literature a much needed book. It will occupy a first rank, as it is from two men who are already well known to the scientific world.

Already Leclainche and Nocard, in their *Maladies Microbiennes*, had touched the subject. But not sufficiently; and besides, since the publication of their last edition, some 12 years ago, microbiology has made enormous progress, which veterinarians must necessarily take advantage of.

Scientific requirements and those of professional practice are such that on account of needed positive facts, in etiology and in the diagnosis of diseases, it is of the greatest necessity for every one to possess sure and practical data that microbiology alone can give.

The treatise is presented under the form of a volume of over 1,000 pages, with 271 illustrations, some of which are colored. These are of much value to the yet uneducated student or even to veterinarians, as they will help them in their researches. The work may and will be useful to physicians, but it is essentially written for veterinarians, and for those whose general occupations relate to diseases of animals.

Practitioners, sanitarians, hygienists, inspectors of alimentary products, all will find in the *Treatise of Microbiology* informa-

tion that they could not obtain, except by long studies among specific works.

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The *Treatise of Microbiology* is divided into two parts.

In the first is presented the general technic, where necessary knowledge is exposed. The chapters on sterilization, the media of cultures, their preparations, the obtention of soluble microbian products, general methods of immunization, the serotherapy, followed by the steps necessary for the bacteriological examination of milk, of meats, etc., etc., all form a most interesting field for the investigator.

This first part occupies nearly half of the book.

The second part is the practical one. It treats of the pathogenous microbes of animals. It is divided into forty-three chapters and is the peculiar and original part of the work. The object is to give for each infectious disease every point that is of microbiological interest. It was an enormous undertaking, as it required an investigation amongst every work that had been published on the subject.

One after the other every microbian disease is treated. Concisely, but in every minute point of importance. Morphological and biological properties of the virus, their pathogenous actions, everything that is essential to the diagnosis is considered.

Of course, the part that relates to the symptomatology, to the lesions, to the natural history of the disease, the epidemiology, are limited as much as the work necessitated.

And yet, some have given material for special remarks and occupy more room. For instance, the tuberculous and pseudo-tuberculous bacilli, that of glanders, of rabies, of epizootic abortion, the filtering viruses, the invisible microbes, the trypanosomas. It is a most interesting chapter.

The treatise of microbiology is completed by an alphabetic table of the matter contained and with the names of the authors, who have written on the subjects.

We have no hesitancy to predict a great success for this work; certainly in France. But we would say as much for its publication in other countries, if ever it is translated.

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REPORT OF THE NEW YORK STATE VETERINARY COLLEGE at Cornell University, for the year 1912-1913. It is indeed for me again great pleasure to look over the excellent showing that the State Veterinary College at Ithaca makes, and to notice the progress that is exhibited.

The report signed by Director V. A. Moore refers, as usual, to the faculty first, then to the students, showing that since 1896 to 1913 the number of undergraduates has increased from 11 to 120.

Then comes consideration of the instruction given, the number of cases treated at the clinics, the diagnosis work including the tests with mallein, tuberculine anthrax, glanders, rabies, etc., with the conclusions of the needs of the college.

There is added to the report an appendix, which shows first the detailed report of the cases treated. Prof. Udall, of the Department of Medicine, shows a total number of 450, including the ambulatory clinics. Prof. W. L. Williams reports in surgical clinics, 254 cases with 962 at the ambulatory clinics.

Dr. H. J. Milks reports at the clinics for small animals 318 as having been treated.

Following this exhibition of practical opportunities, the appendix contains a communication by Prof. P. A. Fish on the *digestibility and decomposition of bob veal*, by Director V. A. Moore and Dr. C. P. Fitch a *study of infectious abortion in cattle*, by the same on the *differentiation between nodules due to glanders and those caused by parasites*, by Dr. E. M. Pickens upon an *outbreak of anthrax due to tannery refuse*, by Dr. Milks on *hog cholera serum*, by Dr. W. E. Muldoon on *surgical anesthesia*, by Dr. F. S. Jones upon a *myxo-chondro-carcinoma* of the testicle of a fowl, by Prof. Wall on *cerebro-spinal meningitis*, and by Prof. Williams on the *disease of the internal generative organs in relation to dairy inspection*.

There are a few illustrations belonging to the various subjects treated in the appendix.

Director Moore can well be proud of the work carried on under his management of the veterinary department of Cornell University.

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Referring to the part of the report where Drs. Udall and Williams make such good show with the work of their respective departments, it reminds me of a similar presentation which was made lately in the *Recueil de Medecine Veterinaire,* where Director H. Vallee, of Alfort, published a statistic of the hospitals and policlinics work of the French school, which some of our American friends have visited during their European journey to the London congress.

In the various wards of the school there were treated 131 cases of diseases of the digestive apparatus, 250 of the respiratory, 27 of the circulatory, 50 of the genito-urinary, 45 of the nervous, 99 of the skin, 20 of the eyes, 300 of general diseases, infectious and parasitic, 126 of neoplasm and similar lesions, 220 of various external troubles, except foot diseases, of which there were 283, and finally 143 surgical operations performed, such as amputation of the penis, parturition, castration, oseophagotomy, ovariotomy, Williams' operation, tracheotomy, removal of the eye, autoplasty, cauterization, neurotomy.

The whole total of patients treated at the hospitals was 1,694.

At the policlinics, which, as I remember it, are always largely attended, the record this year reaches the fabulous figures of 19,625.

All the species of domestic animals being represented: equines, bovines, dogs, cats, swine, caprines, ovines, rabbits, ferrets and birds.

As the students of the French schools have to follow those clinics and care for the patients in the hospitals, during the third

and fourth year of studies, one can judge of the amount of practical opportunities that is offered to them before graduating.

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BIBLIOGRAPHIC ITEMS.—The following has been received and acknowledged with thanks:

Infection and Immunity, a review by N. S. Ferry, Ph.B., M.D., from the Research Laboratory of Parke, Davis and Co.

Also from the same: *Some Phenomena Involved in the Life History of Spirochacta Suis:* Studies on Hog Cholera, by Walter E. King and R. H. Drake; reprints from the Journal of Infectious Diseases.

North Dakota Monthly—Further Suggestions Relating to Hog Cholera—Pointers on Hog Cholera and Its Prevention.

North Dakota Agricultural Experimental Station. Avian Tuberculosis, by Drs. L. Van Es and A. F. Schalk. An illustrated pamphlet on the subject, considering the history of the disease, the geographical distribution, the economic importance in relation to it, its etiology, modes of transmission, and pathogeny, symptomatology, diagnosis, prognosis, prophilaxy and relations to mammalian tuberculosis, with finally a bibliographic list containing the mention of 291 pamphlets, papers and articles that have been written by authors all over the world. The whole forms a valuable addition to the literature on the disease.

A. L.

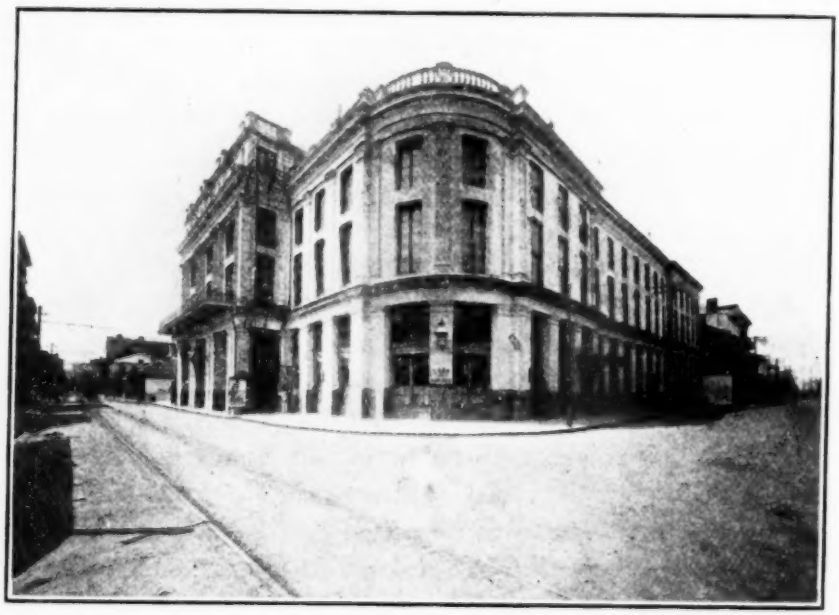
THE LAND OF ROMANCE.

PRESENT DAY GLIMPSES OF PAST SPANISH AND FRENCH GRANDEURS AND ANTE-BELLUM SPLENDORS AWAITING DELEGATES TO THE NEW ORLEANS CONVENTION.

For those delegates to the 1914 convention of the American Veterinary Medical Association who take an interest in the historical and romantic there is in store a rare treat.

At New Orleans there is located the greater portion of the most notable historical buildings and sites of the "Southland."

The city was laid out in 1718, and in 1722 became the capitol of the French territory of the lower Mississippi. In 1762 it was ceded to Spain, together with other French territory, but the inhabitants objected, and when the Spanish governor arrived four years later he was expelled. In 1800 the territory was



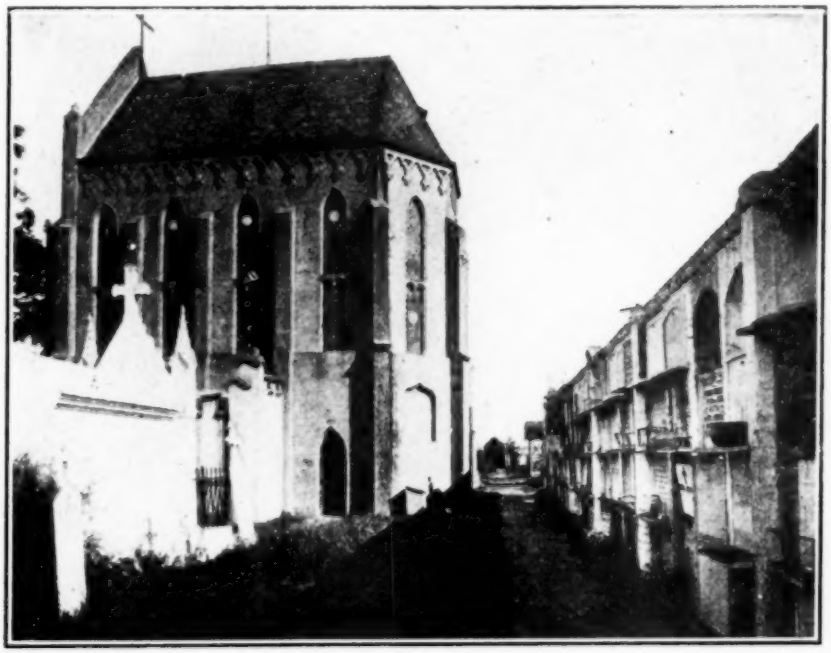
Old French Opera House, New Orleans.

ceded back to France, and in 1803 became part of the United States under the "Louisiana Purchase."

Near the city the last battle of the war of 1812 was fought between an American force under General Andrew Jackson and a British force under Sir Edward Pakenham. All of these most interesting events have left their stamp upon the city, and to the present day innumerable buildings and places associated with the earliest history of the city are preserved.

"Old New Orleans" is probably more distinctly foreign in appearance and general atmosphere than is any city in this country; while the modern part of the city has all the appearance of progress and development that are to be found in our most advanced metropolitan cities.

The Cabildo, or Spanish Court Buildings, where the transfer of the Province of Louisiana from France to the United States took place December 20, 1803, are yet in a state of perfect preservation, and are now occupied by the Louisiana Historical Society, which uses the buildings for a State Museum, that contains one of the most interesting collections of historical paintings and relics to be found. Between the two buildings there stands the St. Louis Cathedral, rich in historical associations of the Church of early American Colonial days. Close by will be found the home of O'Reilly, the bloodthirsty, picturesque Spanish Captain-General, occupied by him in 1700. There is also the "Haunted



St. Roch's Chapel and Cemetery, New Orleans.

House," made famous by Cabell, and at different times occupied by Lafayette, Marshall Ney and Louis Phillipe.

Just outside the walls of the old city, now preserved as a public park, is Congo Square, where bull fights were held in the days of the Spanish régime and voudou dances in slavery days.

The old "Absinthe House," famous at one time as the home of Lafitte, the Gulf Coast pirate, has since 1826 been occupied by the same family, which has used it as a place for dispensing the alluring French drink.

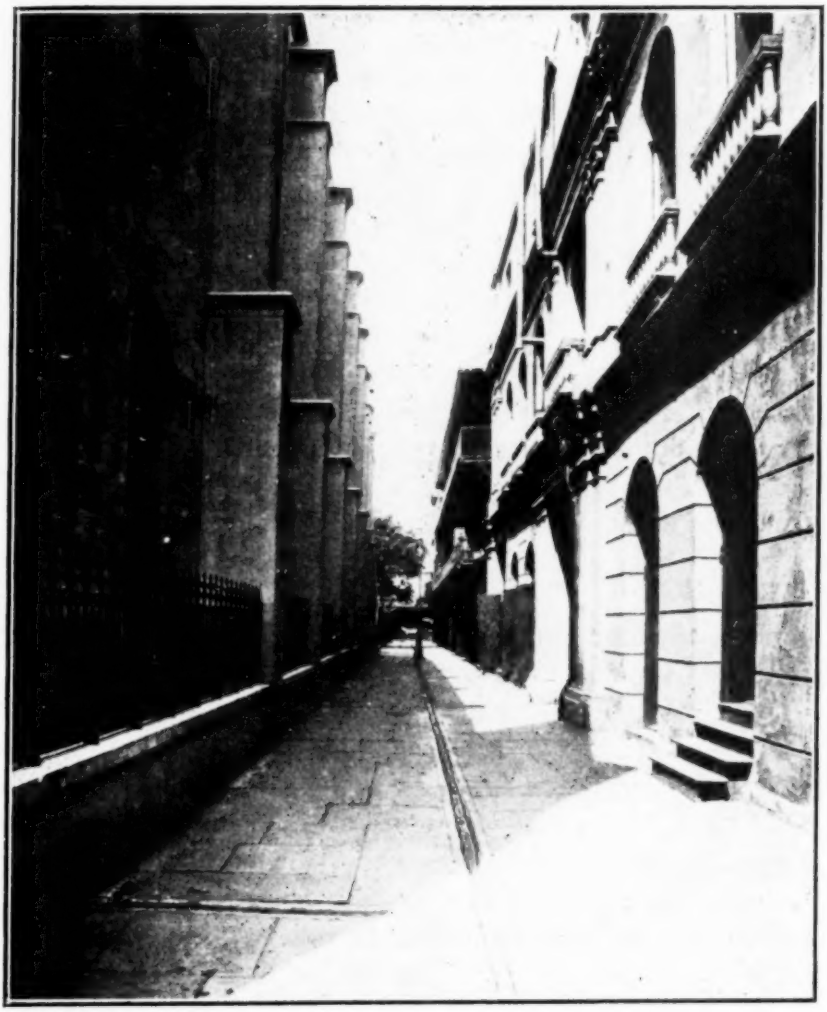
The French Market, where tourists love to make early morning pilgrimages and drink that celebrated coffee, the flavor of

City Park Avenue, near Dueling Oaks, New Orleans.

which can be found nowhere but in New Orleans, is one of the world's most famous market places—of early colonial architecture, built to stand for centuries—it is indeed one of the most interesting and unique places to be found anywhere. Fruits, vegetables, meats and fish of wondrous varieties are here displayed as nowhere else at home or abroad.

A few other points of interest are: "Napoleon's House," erected by his American admirers to receive the prisoner of St. Helena in 1831. He was to have been rescued from his island prison by French patriots of New Orleans, but died before their vessel reached St. Helena.

Hotel Royal, formerly known as the St. Louis Hotel, built in 1816 at a cost of $1,500,000, and once owned by the State and used as a capitol building. In the days before the war this was a



Cloister Alley, Old French Quarter, New Orleans.

great social center of Southern aristocracy; famous statesmen and royalty having been banqueted here. The old building is replete with ante-bellum relics, and in its lobby, for many years, slaves were exchanged and auctioned, and the old auction block yet re-

mains practically unchanged. This was indeed for many years the great hotel of the South, where the old planters lived in princely style.

The French Opera House is America's oldest opera house. Here some of the most noted singers of the world have appeared, and now each season a special troupe of singers, organized in France, is brought for the opera season. Adelina Patti made her American début on this stage, and this is where the gorgeous carnival balls are held during Mardi Gras.

On the battlefield of New Orleans, a few miles below the city, and easily accessible, may be seen marks of the trenches thrown up by Jackson's soldiers when preparing to repel the British; and there still stands on the field the well-preserved ruins of the building in which General Pakenham died. Here is located the famous Chalmette National Cemetery, one of the resting places of the Federal soldiers who fell during the Civil War.

In City Park will be found the "Duelling Oaks"—famous specimens of the live oak tree—for many years the common meeting place of those who resorted to the feudal method of settling private quarrels.

One of the most romantically beautiful and unique places is St. Roche's Chapel and Cemetery, especially dear to Creole Catholics. To its shrine the maid who desires to wed within the year makes her pilgrimage.

St. Louis Cemetery is the oldest in the city, many of the Spanish and French colonists—many of royal blood are buried here.

New Orleans is indeed abounding in entertaining historical sight-seeing trips, with evidences of past Spanish and French grandeurs and ante-bellum splendors on every hand, and days spent in the French or Creole Quarter are never-to-be-forgotten pleasures to be treasured in after years.

The delegates will have many sights to see in this grand old city that will well repay them for the journey. Here they will transact the business of the Association amid novel surroundings and scenes that can be witnessed nowhere else in the United States.

TO NEW ORLEANS BY SPECIAL TRAIN.

In our October issue we proposed to A. V. M. A. conventionists a visit to Chattanooga as a lay-over, en route to New Orleans, and suggested the possibility of making it a central point from which to go in a body to the convention city. We did not go into detail as to the time to be spent at Chattanooga, feeling that we would first like to have an expression from our readers as to whether or not the plan appealed to them. We had in mind the idea of probably arriving there in the morning and leaving in the evening of the same day. There has been no expression, however, so we will not enter into any details in regard to it. President Marshall has sent us some communications received by himself and other members of the A. V. M. A. in Philadelphia, which indicate that the Pennsylvania members have been looking into the matter of transportation, evidently with a view to going in a party, and there is every reason to believe their plans could be made to dovetail with any plans that might be made by members from Canada, New England, New York and New Jersey, and make it possible to run several special cars, or possibly a special train, over a route agreeable to all parties, which would add materially to the pleasure of the trip. The route we had in mind in our previous articles have been the Pennsylvania and Norfolk and Western, and the communications to Dr. Marshall and his associates in Philadelphia have applied to the Pennsylvania and Southern Railway. The Pennsylvania out of Philadelphia, and then either via Harrisburg and the Norfolk and Western, as we had proposed, or via Pittsburgh, and Cincinnati, or St. Louis. We append the letter to Dr. Marshall.

"Referring to meeting of the American Veterinary Medical Association, to be held in New Orleans, La., December 28-31, I beg to call your attention to the excellent through-train service offered by the Pennsylvania R. R., as shown below:

"Via Washington & Southern Ry.:

Lv. West Philadelphia.....	6.52 p. m.
Ar. New Orleans, second morning.....	7.50 a. m.

" Via Washington, Southern Ry., Lynchburg, N. & W. R. R.:

Lv. West Philadelphia	5.42 p. m.
Ar. New Orleans, second morning	9.10 a. m.

" Via Seaboard Air Line Ry.:

Lv. West Philadelphia	5.42 p. m.
Ar. New Orleans, second morning	7.50 a. m.

" On the first two trains shown, there are through cars operated daily, while on the third train there are through cars to Atlanta. In the event of an extra or special car, however, we could operate same on any of the trains shown.

" Winter excursion tickets are on sale to New Orleans at rate of $51.80. These tickets are good returning same route with limit of May 31, 1915. The regular one-way fare Philadelphia to New Orleans is $30.90, and the party fare for ten or more traveling together on one ticket is $25.35. The excursion and one-way fares quoted also apply via Harrisburg and the Norfolk and Western, and via Pittsburgh and Cincinnati or St. Louis. The party fare of $25.35 applies via Washington or Harrisburg and N. & W. R. R. Party fare via Pittsburgh and Cincinnati or St. Louis is $25.40.

" For those in your party who may desire to return via Florida, I would suggest either the party fare of $25.35 or the individual fare of $30.90. This for the reason that in making through sleeping-car reservations, it will be necessary to hold through transportation.

" We will, of course, be glad to operate special or extra through sleepers on our regular trains, or if the size of the party should warrant, would run special train from New York with the New England and New York members picking up the Philadelphia people here.

" For your information I give below individual fares from New Orleans to Florida points, returning to Philadelphia:

New Orleans, La., to Tampa, Fla	$20.82
Tampa to Jacksonville, Fla	5.80
Jacksonville to Philadelphia, Pa., via either road	23.90

"The lower berth rate from Philadelphia to New Orleans is $7.50, upper berth $6 and the drawing-room $21."

We also publish a letter from the Southern Railway Company to Dr. D. B. Fitzpatrick, of Philadelphia, who has been looking into the matter of transportation for the Pennsylvania members.

"Referring to your call at this office yesterday, beg to advise the regular one-way fare Philadelphia, Pa., to New Orleans, La., is $30.90, lower berth costing $7.50, upper berth $6, stateroom $21 and drawing-room $27 between these points, no less than one and one-half railroad tickets being accepted in each stateroom and no less than two full tickets, or their equivalent, in each drawing-room.

"The party fare between Philadelphia and New Orleans is $25.35 each way per capita for parties of ten or more traveling together on one ticket.

"During former seasons winter excursion tickets have been on sale from Philadelphia to New Orleans and return for $51.80, these tickets going on sale about November 1 and being sold every day until April 30, return limit May 31, stopovers being permitted going and returning within final limit, and it is expected that this same fare will apply again the coming winter.

"It is possible that special fares will be arranged to New Orleans and return for this meeting, however, up to the present time we have no advice as to same, but if such fares are authorized, we will advise you accordingly.

"We operate three express trains daily, carrying through Pullman sleeping-cars from New York, Philadelphia and Washington to New Orleans without change, as follows:

	No. 35	No. 41	No. 37
Lv. West Philadelphia..	3.30 a. m.	5.42 p. m.	6.52 p. m.
Lv. Washington	8.50 a. m.	10.10 p. m.	10.45 p. m.
Ar. New Orleans.....	8.55 p. m.	9.10 a. m.	7.50 a. m.
	next day	2d morning	2d morning

"Dining cars—service a la carte, on all trains.

"Trains No. 35 and No. 37 run via P. R. R. to Washington, Southern Railway to Atlanta, West Point route to Montgomery and L. & N. R. R. to New Orleans; train No. 41 via P. R. R. to Washington, Southern Railway to Lynchburg, Norfolk & Western Ry. to Bristol, Southern Railway to Chattanooga, Alabama Great Southern R. R. to Meridian and New Orleans & Northeastern R. R. to New Orleans.

"Train No. 37, New York and New Orleans Limited, carries library-observation car, club car and drawing-room and state-room car."

The communications make it evident that the cost from Philadelphia to New Orleans is practically the same, whichever route is chosen, and also that it is quite possible for the Canadian, New England, New York, New Jersey and Pennsylvania members to arrange a "special" if they can get together on the route after leaving Pennsylvania, and if the stopover at Chattanooga is a desirable feature (even if it is only possible to spend a few hours there), that, too, can easily be included. Secretary Mayo has also been busy in arranging plans for the transportation of members from the western states, as will be seen by a communication under the caption of *New Orleans Route from Chicago*, published on page 209 of this issue, in which he also makes provision for those who may want to go by way of Chattanooga. We would urge therefore, that all those members west of Chicago, or that are on the lines suggested by Dr. Mayo, express their desires in regard to transportation promptly to him, and that all members who desire to go over any of the routes that have been discussed in the REVIEW as applying to eastern members, write immediately to President Marshall at 39th street and Woodland avenue, Philadelphia, Pa., stating which way they would like to go, so that he can get a consensus of opinion, and be able to make arrangements accordingly. If any have become interested in our suggestions in regard to the Norfolk and Western in the recent numbers of the REVIEW, they are reminded that by that route they leave New York via the Pennsylvania Railway, getting onto the Norfolk and Western lines in Virginia. For

any members who may want to spend further time in sight-seeing *after* the convention, the United Fruit Company of New Orleans offers the steamship Turrialba, which will sail from New Orleans on January 2, at 11 a. m., for a cruise to Panama Canal, Costa Rica and Havana, on the following schedule:

	Hours at Sea.	Hours in Port.	Distance Traveled, Nautical Miles.
Jan. 2—Lv. New Orleans, Saturday, 11 a. m.....	....	....	....
Jan. 7—Ar. Colon, Panama, Thursday, 7 a. m...	116	....	1,382
Jan. 9—Lv. Colon, Panama, Saturday, 4 p. m...	....	57	....
Jan. 10—Ar. Limon, Costa Rica, Sunday, 7 a. m..	15	....	191
Jan. 11—Lv. Limon, Costa Rica, Monday, 9 p. m.	....	38	....
Jan. 12—Ar. Bocas del Toro, Tuesday, 6 a. m....	9	....	60
Jan. 13—Lv. Bocas del Toro, Wednesday, 8 p. m.	....	38	....
Jan. 17—Ar. Havana, Cuba, Sunday, 6 a. m.....	82	....	970
Jan. 18—Lv. Havana, Cuba, Monday, 5 p. m.....	....	35	....
Jan. 20—Ar. New Orleans, Wednesday, 5 p. m...	48	....	588
	270	168	3,191

We merely mention this, but earnestly urge that you give the matter of transportation your immediate attention if you desire to go to the south in a party such as went to the coast in 1910; a trip that will remain a pleasant memory for all time.

FOOT AND MOUTH DISEASE AGAIN IN THE UNITED STATES.

For the fifth time in a period of forty-four years this European disease has found its way into the United States, at intervals of ten, twenty-two, six and again six years respectively. Six years ago it made its appearance in Michigan, New York, Pennsylvania and Maryland. This present outbreak seems to have begun in Indiana and Michigan, where vigorous measures were immediately begun to stamp it out. That is the term, *stamp it out*. For while it seems always to exist to a greater or lesser extent in some part of Europe, the United States Bureau of Animal Industry never allows it to exist long in this country.

In the first place the perfect organization of this bureau of the federal government and the efficiency of the members of its force, makes that feat possible; and in the second place they fully realize the absolute necessity of its immediate extermination; as if it gained any material headway, stamping it out would not be an easy task. Four times in the past they have demonstrated their ability to rid the country of this scourge, and the bureau is naturally advancing with the times in its equipment and organization, so that we may feel comfortably confident of its speedy eradication on this, its fifth visit to our shores. With this end in view, the four counties in which it was discovered to be present, were immediately placed under rigid quarantine by the federal government; interstate shipment, not only of cattle, sheep and swine from those counties, but also of hay, straw and other fodder being strictly prohibited. Transportation companies have also been required to disinfect all cars which have been used for transportation of live stock from the infected areas. In addition to these measures taken by the federal government, it is expected, as in previous outbreaks, that the state authorities will co-operate by placing quarantine on individual farms where the disease has been discovered. The headway that this disease gained in New England, twelve years ago, before it was finally suppressed, has clearly demonstrated the necessity for rigorous action at the very start and no let-up until it is exterminated. The 1908 outbreak was dealt with in that manner, and the speedy annihilation of the present epidemic is assured. All veterinarians should be especially observant at this time, and on the lookout for the possible appearance of this disease in their communities.

BE CAREFUL.*

The death of Dr. Richardson, notice of which is given in another column of this journal, and which was due to an infection sustained while holding a necropsy over a cow which was suspected to have died of anthrax, emphasizes the fact that none

* Denver *Medical Times*—Utah *Medical Journal*—Nevada *Medicine*, October, 1914.
Note.—The obituary notice on page 217 of this issue was also taken from the same periodical.

of us can be too careful in the handling of any suspected cases of infection, no matter what they may be. Not only in veterinary, but in human practice does this hold good.

While it is probable that Dr. Richardson observed all ordinary precautions to protect himself, still he became infected. We have seen men in human medicine become victims of infection, even though ordinarily careful. Some years ago an office associate of ours, in cleaning an urethratome, accidentally cut the forefinger of his left hand with the blade thereof. The finger was properly dressed, but in spite of this fact his attention to a case of syphilis, during which he had to treat and dress a chancre, resulted in an infection, from which he died a few months later, after having lost his mind through formation of cerebral gumma. We have seen operator after operator, working in simple pus cases, as well as specific infections, become infected through lack of care in protecting themselves. We have seen men infected through the making of simple examinations of members of the restricted district, and all through lack of proper protection of themselves.

It is probable that no man, or woman for that matter, carries a sound epidermis at any time, and more especially is this true of the hands. We may not notice the slight abrasions which so frequently occur, but they are almost, if no quite, invariably present, open and ready for the invasion of infecting agents. In working, both in the dead and recent subjects, we are liable to greater or less abrasions of the hands at all times and these members should invariably be covered, and well covered. Even though there may be no appreciable infection present, there is none the less reason for self-protection, as we know not what we may encounter.

Time was, when an annointing of the hands with some stiff grease was thought to be all that was absolutely necessary, but we have seen infections follow such protection and to such an extent as to, within our own mind, make things of this sort worthless. It was also thought, until very recently, that the cauterization of suspected points of infection guaranteed immunity, but

it is now known that such procedure carries no such absolute guarantee.

The only way in which one may be guaranteed absolute immunity is through covering the hands, or other exposed parts, with something of an absolutely impervious sort. The surgeon, in that his patient may not meet with possible infection from the hands, covers those members with rubber gloves. By so doing not only does he protect his patient, but himself as well. He furnishes an impregnable barrier to possible infection carriage, both to and from himself, thus offering a double protection. He who performs necropsies likewise should protect himself. He who works in the face of possible infection should never be without his rubber gloves, or other proper protectives.

Recently a hand varnish, practically a flexible collodion, has been suggested, to be employed instead of gloves or other protectives, and for the reason that such varnish does not interfere with tactile sense, as much as does the thick rubber over the finger tips, as well as for economic reasons. If it be possible to thoroughly cover the hands with such protective, the suggestion would be ideal, as it would do away with the possible tears in rubber gloves, as well as their frequent replacement, with incident cost. The varnish is easily applied and removed, a mixture of ether and acetone, sufficing to accomplish the latter. But is such a covering invariably impervious? We have noticed, in small applications of collodium, that it is liable to crack and peel off the skin surface. If this is true of small areas, may we not anticipate a like condition when the entire hand is involved? Of course, such cracks may be repaired, but possible infection might follow prior to the making of such second applications of the varnish, however, the idea is worth while and our objections may not be made on solid ground.

We all know that rubber gloves are liable to tear, but if one has a finger stall at hand, he can immediately protect himself therewith and proceed with his work. If a tear comes in the glove, other than in the finger, a new glove should be donned at once. In doing necropsies, and especially in the face of suspected infec-

tions, the gloves used should be of the heavier sort. The tactile sense is not required to as great an extent in this class of work as in that on recent subjects and where repairs are to be made, and consequently protection is the matter of paramount importance.

In the death of Dr. Richardson, a man of more than ordinary physical vigor, we are giving an example of what may happen to any of us, unless we observe all precautions in self-protection. If we go on handling cases without a barrier between ourselves and our subjects, we may, sooner or later, chronicle like happenings among our doctors of human medicine. Protective agents are not expensive and even though we may be obliged to obtain a new pair of gloves for every case, let us do it and protect ourselves. In addition to the gloves, let us always carry a goodly supply of finger stalls, so that we may immediately repair finger tears therein. In addition to the gloves, we should always carry a supply of collodion, or other soluble and flexible hand varnish in our emergency grip, for in an emergency we might find our gloves faulty and be obliged to rely upon other protective agents. Let the rubber glove habit become a fixed one and never be without at least one pair in your grip. If you are doing much, if any post mortem work, have a second, and heavier pair with you.

Such action will not only give you a greater sense of personal security, but will convey to the minds of your patrons that you are a careful and painstaking physician; that if you will properly care for yourself, you will do likewise for your patient.

COMPLETE PROGRAMME, HOTEL HEADQUARTERS AND MEETING PLACE.—We had hoped up to the last moment to be in possession of full particulars in regard to programme, meeting place and hotel headquarters of the A. V. M. A. at New Orleans, for publication in the present issue; but in the end had to go to press without it. The December issue will be ample time however, as the meeting does not occur until the end of the month.

ORIGINAL ARTICLES.

FILTERABLE VIRUSES.*

By Prof. K. F. Meyer, Berkeley, Cal., Department of Pathology and Bacteriology, University of California.

I understand that my duty as reporter on filterable viruses consists in indicating and defining the principal points for discussion, rather than in undertaking a full discussion of them, myself.

In reviewing the achievements a remarkable advance is noticeable in the last four years, but one regrets that most of this work has not been carried out systematically and that, therefore, many facts reported are not available for comparison or conclusion. Confronted with the immediate, practical application of the results, the tendency in the study of filterable viruses of animal diseases has been in the direction of sanitary control and eradication of the diseases caused by them.

The question of *immunity* and the methods of *immunization* in these epidemic diseases have been rather superficially studied, and the biology and morphology of the filterable viruses have been treated more from a comparative point of view. Most of the facts have already been collected by MacFadyean, Loeffler, Doerr, Vallilo, Lipschutz, Wolbach and others, in such a masterly manner that I prefer to specify particularly the points with which I am personally familiar and which seem to me to have considerable bearing in the advancement of this new science.

The study of filterable viruses is, like any other part of science, attended with considerable technical difficulties, and the experimental results obtained depend largely on the ingenuity of the experimentator. Inasmuch as the process of filtration

* According to a report for the Tenth International Veterinary Congress, 1914, in London.

has been used as a means of classification, general uniformity in the methods applied should be attempted, if in any way possible.

Roux, Remlinger, Borrel, Marchoux, Schmidt, Rosenthal and others have shown that the process of filtration depends on various physical conditions of the filter candles or their diatomatous earthen substitutes. The rules which have been suggested by Marchoux for the process of filtration in establishing the filterability of a disease-producing organism have uniformly been adhered to in recent investigations. For some filterable viruses comparative investigations should undoubtedly be undertaken, and the original experiments, on which our classification was based, should be repeated from a modern viewpoint. This is particularly true in the case of cattle plague, Aujeszky's disease, lyssa, etc. For the first-named disease a remark by C. T. Martin (London), made at the last medical congress in London, is at hand, in which he refers to some experiments of Todd, which showed that the virus of cattle plague was not filterable. Bertarelli and Melli found, in supporting the findings of Zwick, that the micro-organisms of pseudolyssa was not present in the filtrates. For the virus of rabies the different views as to the filterability are expressed in the works of Remlinger, DiVestea, Poor and Steinhardt, Marie, Bertarelli and Volpino, Celli and duBlasi. The first-mentioned writers obtained positive results regularly; the last three failed to pass the virus through Chamberland candles or even through Berkefeld candles. These facts show clearly how varying the results can be when using different materials for filtration. Poor and Steinhardt obtained 100 per cent. virulent filtrates with the Berkefeld filters and 75 per cent. with the Chamberland F. filter when using gland virus (submaxillary glands were placed in distilled water and the virus aspirated by suction). These results suggest that the virus was in a freer condition in the glands than in the fixed brain virus used by DiVestea, who obtained only 25 per cent. of positive results with a Chamberland filtrate. It is absolutely necessary in all filtration experiments that the time, the pressure, the tem-

perature, the dilutions of the filtrates and the type of candle be carefully recorded. The most careful investigations of Borrel, Rosenthal and Doerr on the various filter candles have clearly shown that the width of the pores and the brands of the various firms are frequently far from being accurate and that a careful standardization of any candle used for exact comparative work is a prerequisite. By following the suggestion of Doerr in working absolutely quantitatively with the virus to be filtered, as well as with the filtrate, I have also found that the Chamberland candle F frequently permitted more virus to pass than the Chamberland candle B under the same experimental conditions. Several attempts to use the various methods of Bechhold, Marchoux and Rosenthal in standardizing the filters have given very unreliable data, but I hope to take up the question again with the filter plates prepared by Rosenthal's method, which permits far more accurate graduation of the width of the pores.

The dilution of the virus to be filtered is absolutely necessary, and many failures have been observed by the author in his studies with pleuropneumonia and hog cholera. When working with mixtures of the virus—which are rich in albumen—according to works of Bechhold, Rosenthal and others, adsorption of the proteins, peptones, etc., always takes place in the filter pores and, finally, the filtration is actually through a colloid filter, which frequently prevents the passage of the disease-producing virus. In our experience a dilution of 2:100 or 1:100-150, with saline, is the proper concentration for the virus to be filtered, when a serum virus is used. It is advisable—particularly when the virus has been obtained from tissues—to begin the actual experiment by coarse filtration through filter paper, or, better, through sand or loose asbestos filters. Very flocculent, pleural exudates from cases of pleuropneumonia should always be prepared for filtration in this manner.

In 1908, Giemsa and Prowazek and Beaurepaire Aragao reported the use of so-called colloid filters for the study of filterable viruses. Bechhold, in describing his methods of ultrafiltration, suggested its possible use for the study of filterable

viruses. In some very interesting experiments Prowazek and Beaurepaire Aragao demonstrated by means of a simple technique, in which the second filter consisted in a 3 per cent. agar colloid membrane, that the virus of variola could be concentrated in pure form. The upper layers of the agar contained the specific, coccus-like bodies; the filtrate, a so-called "ultra-filtrate," did not contain these elements and yet was virulent in tests on rabbits.

Quite recently v. Prowazek has improved the apparatus for his "ultra-filtration," and it is to be hoped that more experiments along these lines will be carried out. Giemsa and v. Prowazek found the fowl plague virus retained by a Pukall filter candle, which was covered by a 3 per cent. agar colloid layer. *Sieber* has applied the ultra-filtration to the virus of African horse sickness and found that the causative agent will not pass a 1 per cent. agar or a collodion or celloidin layer; however, according to *Kuhn*, his experiments are of no value, as the time of observation did not cover the necessary 45 days, since the horses were tested on the fiftieth day for a possible immunity (and not as it was done in the experiments: on the ninth, twenty-fifth and eighth day, respectively). Poor and Steinhardt could not filter the purified and freed rabies' virus through collodion sacs.

We have carried out numerous ultra-filtration experiments with the hog-cholera virus and found that it will pass through a 1 per cent. agar colloid layer, in very small amounts; not at all through a 2 per cent., and never through a 3 per cent. agar or through a celloidin or collodion membrane. Similar experiments by the writer, using Bechhold's ultra-filter, also proved the statement of Betegh that the hog-cholera virus will not pass through a 4 per cent. acetic acid collodion filter. The work of v. Betegh is not free from criticism, as his reports fail to show the necessary controls for the virus which had been used. The rather complicated preparation of the ultra-filters (after the method of Bechhold), combined with the disadvantages of their not being in a condition to be sterilized, will only in rare cases

invite comparative studies. Furthermore, the concentration of the colloids in the membranes must be high and of a considerable density to insure a filtrate which is even free from bacteria; under these conditions I could observe that the colloids lead to an unnecessary adsorption of the filterable viruses and, naturally, sterile filtrates were always obtained. I agree with Doerr that the ultra-filters of Bechhold will not bring much more information on the nature of filterable viruses. The method of v. Prowazek is very simple and will undoubtedly prove to be of great value for the comparative studies, of which a few examples have been cited.

The conception of an "invisible or ultra-microscopical" virus has been entirely abandoned, since Bordet, Dujardin-Beaumetz, Borrel, v. Prowazek, Paschen and others have explained that some of the filter passers at least can be demonstrated microscopically. The filterability of most of the viruses is sufficient evidence for concluding that all filterable viruses are corpuscular, inasmuch as they are retained by the finer Kitasato filters, through which colloidal particles freely pass. Some of the supposed filterable viruses can be seen in specially fixed and stained preparations, either in form of so-called "cell inclusions" or "elementary bodies."

Cell inclusions have been known since 1892 through the work of Guarnieri, who called attention to peculiar bodies in the protoplasma of epithelial cells in vaccinia. The Negri bodies in lyssa, the Benda bodies in epithelioma contagiosum, the Schiffmann's corpuscles in fowl plague, etc., all belong in the class of *cellular changes*, which, according to the views of our best protozoologists (Borrel, v. Prowazek, Hartmann, etc.), represent the products of reactions of the cells towards the invading parasitic virus.

These cell inclusions are characteristic for the particular virus by which they are caused and are particularly found with regularity in the proliferating ectodermal cells of "distinctly dermotropic" diseases (Lipschutz) and are, therefore, of diagnostic importance in vaccinia, epithelioma contagiosum and

other diseases. But also in neurotropic diseases the degenerated cells derived from the ectoderm show similar bodies; we may mention here rabies and fowl pest only. Quite recently Uhlenhuth and Boeing have reported the existence of cell inclusions in hog cholera in the conjunctival epithelium, and Kuhn in African horse sickness in the renal epithelium; these are the first findings of inclusions in acute septicemic diseases caused by filterable viruses. The inclusions are most readily seen in proper preparations in the cytoplasma of the cells, compressing the nucleus very distinctly; in epithelioma contagiosum, for example, their structure is a very complicated one, and therefore the views concerning these bodies are very numerous.

The author has seen only twice, in scrapings from the conjunctiva of hogs suffering from hog cholera, the above-mentioned "trachoma-like" bodies of Uhlenhuth, stained after Giemsa; large, blue-violet bodies of oval shape, surrounding the nucleus, consisting of blue plastin-like substance, contained numerous granules which stained a deep purplish-red. The number of hogs systematically examined has been very small, and therefore cannot express a conclusive opinion. In numerous sections of kidney tissues from spontaneous and experimental African horse-sickness cases, I have failed to find the inclusions described by Kuhn.

The demonstration of the Negri bodies has been used by the author for many years for the diagnosis of rabies, and their constant presence in hydrophobia was tested in at least 1,500 examinations of various nervous tissues. They are specific for the disease. The difference in size and distribution are most striking. In cattle the Negri bodies are very large and numerous in the hippocampus; in the horse they are very small and usually in very confined areas; in cats they are mostly found in the Purkinje cells of the cerebellum. Luzzani-Negri has shown that the failures to demonstrate Negri bodies in cases of rabies do not exceed 4 to 5 per cent. (4.07 per cent. in 4,961 carefully tested cases).

The Lentz' distemper bodies, which are small and irregular

in shape, are frequently extracellular in the hippocampus, but as far as our observations were concerned on about twenty dogs in Philadelphia, they were not always present and were frequently few in number. These bodies are quite distinct from the Negri bodies and can never be mistaken by the trained observer. According to the researches of Borrel, Hartmann and others, not all the cell inclusions are the parasite causing the disease, but are cellular reactions which, for example, in rabies not only deform, but also encapsulate the invading micro-organism. In hog cholera sufficient evidence is at hand that also the blood serum, in which the cell inclusions are entirely absent, is infectious. The filtration experiments with lyssa by Remlinger, Poor and Steinhardt and others have shown that the Negri bodies undoubtedly fail to pass the filter, and yet the filtrate is virulent. V. Prowazek denies, further, the possibility of the inclusions being the parasite; owing to their homogeneous and polymorphous structure, they are not sufficiently differentiated to be grouped with any developmental stages of protozoa. On the other hand, the recent publication of Bosc on the life cycle of the parasites of sheep-pox will demonstrate, if confirmed, the relation of the protozoa to the filterable viruses.

Summarizing the views concerning the "cell inclusions" found in filterable viruses, one can state that they are of diagnostic importance, but do not represent a developmental stage of the micro-organism of a filterable virus.

In 1907, v. Prowazek, in reporting on his findings in trachoma, expressed the view that the small, round, well-defined bodies, barely visible with our optical systems, represent the virus. He called these structures "elementary bodies." They form, together with the specific products of cellular reaction, the so-called "Chlamydozoa." In all diseases in which the Chlamydozoa have been demonstrated, the causative agent was found to be filterable. They form, therefore, a group of filterable, but yet visible, organism causing disease, and are the so-called *Strongyloplasma* of Lipschutz; this group does not belong to the bacteria or to the protozoa. The observations thus far made

on these coccus-like bodies do not permit of final, conclusive deductions. It has already been pointed out that in the study of filterable viruses, aside from remarkable analogies, very pronounced contrasts may exist and are constantly noted; the same is true of the "Chlamydozoa," and I think that we are not justified in concluding that a cause of a disease is filterable when cell changes resembling those produced by Strongyloplasma have been demonstrated. The work on "Anaplasmosis" and Borna's disease are only two examples to illustrate this statement. The constant presence of small, spherical, coccus-like bodies in tremendous numbers represent—in some diseases at least—the causative agent. This has been particularly proven through the splendid work of v. Prowazek and Paschen in vaccinia and variola; in sheep-pox by Borrel; in epithelioma contagiosum by Lipschutz; and in rabies by Negri. That the granular bodies—which have been described by Sieber in African horse sickness, in hog cholera by v. Betegh and also by the author—can be interpreted in a similar manner is highly improbable, and the skepticism of Huntemuller, when discussing the foot and mouth disease bodies, is quite justified. However, inasmuch as v. Betegh and Muller describe, for foot and mouth disease, similar bodies which do not correspond in their microchemical reaction, a renewed effort should be made to investigate these inclusions, for which ample opportunities are offered in Europe. Huntemuller considers the granules he found in the contents of the blebs in foot and mouth disease to be "colloid granules" which were precipitated on account of the destruction of the cells by the virus. He even questions the variola and vaccinia bodies. I have seen similar granules during my studies on pleuro-pneumonia and hog cholera, particularly when using the enrichment method of v. Prowazek with colloid filters. For the latter disease these granules could be demonstrated in the urine, which proved by experiment to be highly virulent; a possible misinterpretation of serum granules was eliminated as much as possible by selecting this type of virus. The careful studies of v. Betegh also indicate that they are in some way connected with the virus of hog cholera.

A very interesting report by Noguchi and Cohen on the cultivation of so-called trachoma bodies now suggests a way to prove the identity and specificity of cell inclusions and elementary bodies. The transformation of the bodies in the culture and the morphological features of the isolated organism are strikingly similar to the well-established facts, and every effort should be made to prove or disprove their findings.

All attempts have so far failed to demonstrate the "invisible" viruses, like rinderpest, pernicious anemia, etc., by means of the ultra-microscope or microphotography with ultra-violet rays, according to Kohler. Celli and duBlasi report only failures with the ultra-microscope in agalactia contagiosa, as does Rosenthal for fowl plague. Probably numerous, similar unsuccessful attempts have never been reported for other filterable viruses.

The fact that Rous and Murphy and Henke and Schwarz have shown that typical malignant tumors can be transplanted by filtrates of the tumor mass to their respective hosts opens a new era in the study of tumors. What importance this work may have on the pathology, and particularly on the Chlamydozoa theory, cannot as yet be decided. In any case the work of Borrel, Farmer, Mooreaud, Walker and others show connecting links between tumors and infectious diseases. Perhaps further investigations will show that the tumor described by Rous is not a true neoplasma but a granuloma; the intermediate stage between classic bacterial granulomata and so-called true tumors may have been found. Naturally, the chicken tumors thus far studied would, in many respects, be more closely related to the neoplasmas than the granulomatas.

As soon as the views concerning the corpuscular character of filterable viruses had gained sufficient ground, experiments were undertaken to concentrate the various organisms by centrifugalizing. These experiments have been successful only in rabies, fowl plague and vaccinia virus. Chauveau and v. Prowazek found that the vaccinia virus, after prolonged standing, sediments to such an extent that the upper layers of the fluid bulk

were inactive. Remlinger, by centrifugalizing, filtered rabbit-brain emulsion in distilled water and found that the supernatant clear fluid was inactive. Similar experiments by Landsteiner and Ross demonstrated that the virus of fowl pest was concentrated with the sedimented red blood cells when infectious blood was centrifugalized—they could not decide whether the virus was only attached to the blood cells or whether it was intracorpuscular. *Sieber,* in experimenting with the virus of African horse sickness, could not concentrate the virus by centrifugalizing; the same results were obtained by Uhlenhuth and his collaborators when working with hog-cholera virus (blood and urine).

Quite recently, Dinwiddie concludes from some experiments in centrifugalizing citrated hog-cholera blood, that the virus of this disease can be sedimented. These assertions stimulated further investigations. K. F. Meyer reported in 1912 that he had found that the red blood cells retain the virus of hog cholera even after twelve careful washings with saline solution; he pointed out at that time the deficiency of Dinwiddie's technique, as in all of his experiments the last wash-water produced the disease, and no quantitative, comparative tests with the filtrate and filtrans* were carried out.

In the experiments conducted by the author on the Experimental Farm of the Pennsylvania State Live Stock Sanitary Board, it was clearly shown that the virus will become "sedimented" with the blood cells by centrifugalizing, and that it is not removed by washing. However, it is not simply a process of sedimentation, as the supernatant fluid contains the virus as well, even when collected with the greatest precautions. Prolonged centrifugalizing of plasma absolutely free from haemoglobin does not show any sedimentation. In continuation of these experiments, which were several times repeated, it was further noted that the hog cholera virus will attach itself to any blood cells (normal hog, rabbit, sheep) in such a manner that repeated washings will not remove it. The last wash-water being, in all of these experiments, either free or partially free

* "Filtrans," virus to be filtered.

from virus. The first requisite is hardly possible to obtain, as, on foreign blood cells particularly, the virus seems to attach itself not as solidly as on hog cells.

Sieber reported that the virus of African horse sickness, after ten washings, was present with the blood cells.

Landsteiner found that the virus of fowl pest is fixed to such an extent to the fowl and rabbit blood cells that the serum could be deprived of the micro-organism by centrifugalizing. These observations point to the existence of a common cause for both viruses, namely, a physico-chemical process. Without going into details, the assertion is made that the corresponding lipoid substances of the protoplasma of the parasite and of the membrane of the blood cells melt together, causing the inseparability of the virus from the blood cells observed in the experiments. Similar conditions are met with in protozoan diseases; for example, in East Coast Fever the parasite is attached to the blood cells in the same way as the lime particles to the oil globules of a lime-oil suspension. The relation of observations of Theiler and Baldrey on rinderpest virus to the above-mentioned experiments is not known. It is a fact that with clear serum one is incapable of producing the disease, the virus being suspected of location in the red blood cells.

The explanations already given for the hog-cholera virus warrant a renewal of investigations of these statements, which, if the observations of Braddon are confirmed, will undoubtedly be of greatest interest.

Kolle and Turner have already disproved, experimentally, the supposition that the cattle plague virus is in the blood cells, by demonstrating that even hemolyzed blood fails to pass through filters, the virus being also unfilterable under these conditions. The recent work of Nicolle and Adil Bey, Ruediger and others have shown that only the virulent peritoneal transudate, obtained by injecting saline solution in the abdominal cavity of sick cattle, will give a virulent filtrate. The adsorption experiments of Kraus, v. Eisler and Fukuhara can probably be explained in a similar manner. These experiments are of con-

siderable importance in the concentration of filterable viruses and have been successful only for rabies, fowl plague and vaccinia. All attempts of Uhlenhuth and his collaborators to cause adsorption by kaolin, charcoal or oil have failed.

Cultivation of Filterable Viruses.—The number of successful attempts in cultivating the filterable viruses is very small, but the last years have shown that they can be achieved by using certain special precautions and, particularly, especially devised culture media. That cultures would not help materially in the solving of the pending questions on the biology of the filterable viruses, but would be of tremendous economic importance in the preparation of immune sera, is self-explanatory. From the reports of successful cultivation we exclude all the saprophytic micro-organisms and consider here the true parasitic viruses only.

The only filterable virus which has been readily cultivated is the virus of pleuropneumonia. The process of cultivation is, in our experience, so successful—as has been shown again, quite recently, by Poppe—that it can be used even for diagnostic purposes. The description of the morphologic appearance of the cultured organism, the so-called "Astrococcus mycoides," given by Bordet, Dujardin-Beaumetz, Borrel, Jeautet and Jouan, differ somewhat. According to the author's very superficial study with African pleuropneumonia virus, he prefers to compare the organism he found in unstained and stained preparations (Giemsa and Loeffler) with the granule-like bodies he saw in smears of the poliomyelitis virus, demonstrated to him by Noguchi. However, since the publication of Huntemuller has demonstrated how easily colloid granules are stained, I doubt if I have actually seen the micro-organism, except in whole culture.

Marchoux and, later, Landsteiner and Berliner have cultivated the fowl-pest virus on 2 per cent. glucose fowl blood agar. The presence of the virus being revealed only through the infectiousness of the subcultures carried beyond any reasonable limit of dilution from the original. The cultivation of the poliomyelitis virus by Flexner and Noguchi was only a step to the culture of the rabies virus by Noguchi. Both cultures were only

obtained by using the well-known method of the Japanese investigator for the cultivation of spirochaetes under strict anaerobiosis. The description of the culture of the lyssa virus is very brief so far and, if the criticism of Volpino is correct that lipoid bodies can be mistaken for the developmental stages of Negri bodies, one anticipates with interest the further publications of Noguchi on the study of rabies.

The report of Fornet, on a culture of variola, has not been confirmed thus far, and in regard to the cultivation of the hog-cholera virus by Pfeiler and Lentz, no information is given in their publication as to the medium or method used. Inasmuch as every worker on hog cholera has attempted the cultivation of the virus—but only failures have been reported—the publication of Pfeiler and Lentz must be accepted with skepticism until further details are known. The apparent cultivation of the foot and mouth disease virus by Siegel, Pfeiffer and others should be a lesson to every one working with filterable viruses and their cultivation.

(*To Be Concluded in Next Issue.*)

EASTERN LIVE STOCK SANITARY ASSOCIATION.—The fourth annual meeting of the above association was held at the State Capitol, Albany, N. Y., on October 21 and 22, 1914. The officers are Hon. Franklin Dye, Trenton, N. J., Secretary of Agriculture of that State, President; Dr. C. J. Marshall, State Veterinarian of Pennsylvania, Secretary and Treasurer; and an Executive Committee, of which Dr. A. Joly, Live Stock Sanitary Commissioner of Maine, is Chairman, and has associated with him on that important committee, Hon. Jeffrey O. Phelps, Jr., Hartford, Conn., and Dr. Louis A. Klein, Dean of the Veterinary School of the University of Pennsylvania. Members were present from Connecticut, Maine, Massachusetts, New Jersey, New York, Pennsylvania, Vermont, New Hampshire, Maryland and Delaware. Amongst the contributors to the programme representing our profession were Drs. John F. DeVine, Louis A. Klein, R. A. Ramsay, H. D. Gill, V. A. Moore and Paul Fischer. Details of the proceedings will appear in our next issue.

ON THE ACTION OF ST. JOHN'S WORT AS A SENSITIZING AGENT FOR NON-PIGMENTED SKIN.*

By T. B. Rogers, D.V.S., Scientific Department of the H. K. Mulford Company, Philadelphia, Pa.

Scattered through the pages of veterinary periodicals we may find occasional references to the noxious properties of St. John's Wort. Some of these are direct—*i. e.*, the writer recognizes the herb as the cause of the peculiar train of symptoms we are about to describe; in other cases their symptomatology leaves no doubt as to the exciting cause, although the writers do not refer to it.

Having had the opportunity of observing a dermatitis of non-pigmented skin due to ingestion of the herb, and having furthermore gleaned knowledge regarding it from various sources, we have, during the past year, utilized the resources of the Pharmacological and Analytical Laboratories of the H. K. Mulford Company in a somewhat detailed study of the properties of St. John's Wort, believing that the sensitization of the skin to light by means of this drug might perhaps open up a new field in pathology.

We have seen an entire herd of Holstein cattle with the white skin hanging in rags and the dark skin soft and supple as a glove, the condition being due to exposure to sunlight after eating this herb. We have observed other cases where not only the white skin but the white buccal mucosa and conjunctiva suffered acute inflammation from the same cause, and we may note in passing that some of these cases much resembled the conditions seen in foot and mouth disease.

Careful and extended personal observation has demonstrated that in the writer's field of practice—Southern New Jersey—the weed is very common, and we trust that practitioners in the dis-

* Read before the October, 1914, meeting of the Veterinary Medical Association of New York City.—A Study from the Mulford Laboratories.

tricts where varieties of it exist will favor us by sending in fresh samples with reports of cases of dermatitis due to its ingestion.

We are instituting a careful examination of the different coloring matters contained in the herb and their relative toxicity to animals, but as the experiments will necessarily be carried over some months we have deemed it best to reserve their consideration until later.

In making this investigation we have been afforded the aid of the Mulford Research Laboratories, and we also acknowledge the kindness of the Philadelphia College of Pharmacy in placing the resources of their library at our disposal, thus enabling us to obtain many interesting ancient references to the properties of the herb. These references are of especial value for the reason that they illustrate a truth that we are all too apt to spurn—*i. e.*, that while a widely spread and long-continued popular belief in the activity of a drug may be obscured by much that is false and irrelevant, we are sure to find a kernel of truth if we but seek it. We have quoted in these references in part and have also given the tabulation of the American varieties of the plant from Britton and Brown's Botany, because we believe that the veterinarian will be glad to have under his hand a variety of information that has been somewhat troublesome to find.

DESCRIPTION.

Hypericum Perforatum. St. John's Wort. A perennial herb, abundant both in Europe and in this country, often covering whole fields, and proving extremely troublesome to farmers. It is usually from one to two feet high, with leaves which, from the presence of numerous transparent vesicles, appear as if perforated, and have hence given origin to the botanical designation of the plant. The flowers, which are numerous and of a deep yellow color, appear during the summer from June to August. The flowering summits are the parts used, though the unripe capsules are possessed of the virtues of the plant in an equal degree, and the seeds are said to be even stronger. St. John's Wort has a peculiar balsamic odor, which is rendered more sensible by rub-

bing or bruising the plant. Its taste is bitter, resinous and somewhat astringent. It imparts a yellow color to cold water, and reddens alcohol and the fixed oils. Its chief constituents are volatile oil, a resinous substance, tannin and coloring matter. As a medicine it was in high repute among the ancients and the earlier modern physicians.

Among the complaints for which it was used were hysteria, mania, intermittent fever, dysentery, gravel, hemorrhages, pectoral complaints, worms and jaundice; but it was perhaps most highly esteemed as a remedy in wounds and bruises, for which it was employed both internally and externally. It is difficult to ascertain its exact value as a remedy; but, from its sensible properties and from the character of the complaints in which it has been thought useful, it may be considered, independently of its astringency, as somewhat analogous in medical power to the turpentines. It formerly enjoyed great reputation for the cure of demoniacs, and the superstition still lingers among the vulgar in some countries. At present the plant is scarcely used except as a domestic remedy. The summits were given in the dose of two drachms or more. A preparation was at one time official, under the name of oleum hyperici, made by treating them with a fixed oil. It has a red color and is still used in many families as a sovereign remedy for bruises. It is commonly called red oil.—United States Dispensary, 14th edition, p. 1668.

The following varieties are tabulated in Britton and Brown's Botany as occurring in the United States and British America:

Botanical Name	Common Name	Habitat
H. Ascyron (Flowers June-Sept.)	Great or Giant St. John's Wort.	Quebec, Vermont, Conn., Manitoba, north N. J., Ill., Iowa, and Minn., also northern Europe and Asia.
H. Kalmianum (Flowers August)	.....	Niagara Falls to Sault Ste Marie, along Lakes Erie and Huron, Muskoka, Ontario and oak barrens of Tullahoma, Tenn.
H. Prolificum (Flowers July-Aug.)	Shrubby St. John's Wort.	Sandy and rocky soil, N. J. to Ga.; ascends to 3400 feet in Va.
H. Densiflorum (Flowers July-Sept.)	.....	Pine barrens of N. J. to Fla., west to Tenn., Ark. and Texas.
H. Galivides (Flowers July-Sept.)	Bed Straw St. John's Wort.	Low grounds Del. to Fla., west to eastern Tenn. and La.

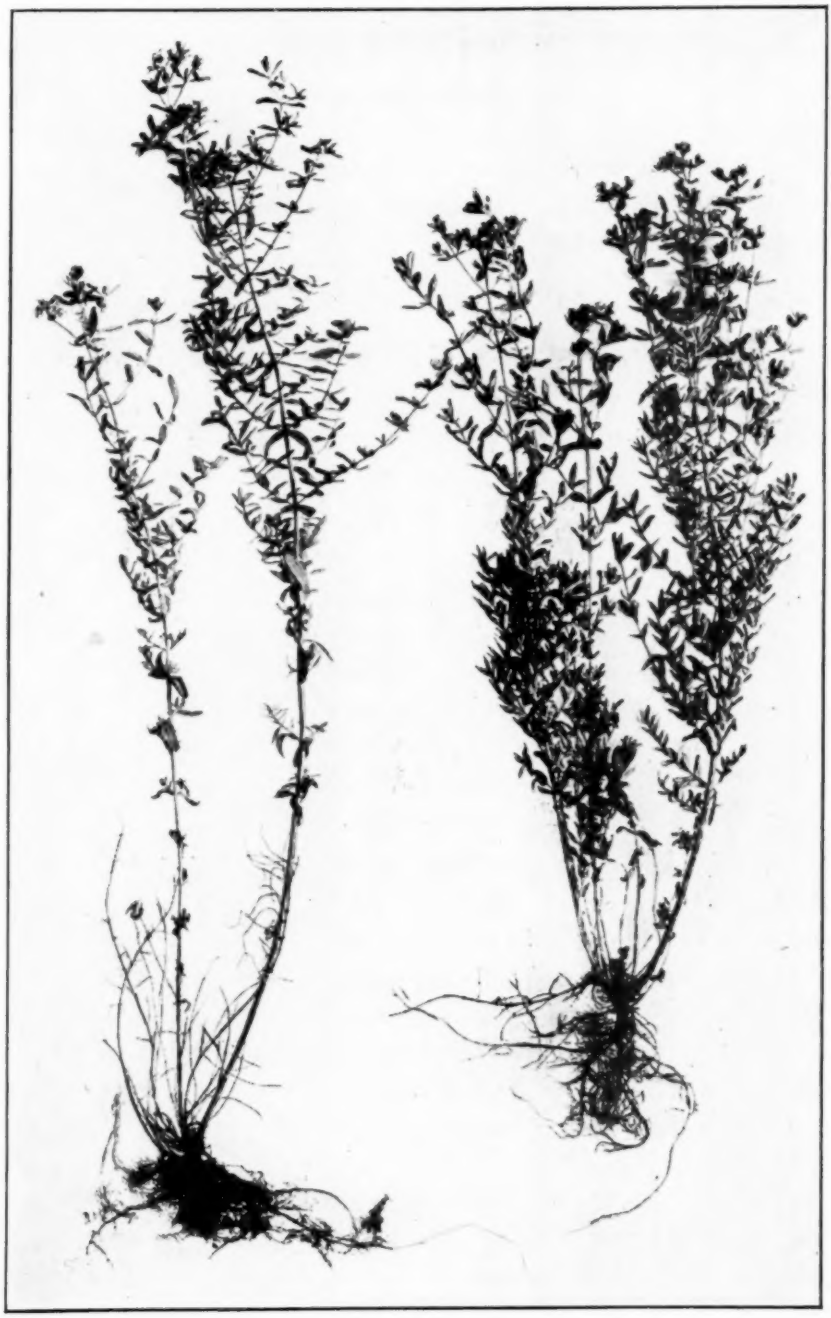
Botanical Name	Common Name	Habitat
H. Adpressum (Flowers July-Aug.)	Creeping St. John's Wort.	Low grounds Nantucket to N. J., and Pa., south to Ga., La., Miss., and Ark.
H. Sphærocarpum (Flowers July-Sept.)	Pound podded St. John's Wort.	On rocky banks, southwest Ohio to Iowa; south to Ala. and Ark.
H. Dolabraforme (Flowers July-Aug.)	Straggling St. John's Wort.	Dry hills, barrens of Ky. and Tenn.
H. Ellipticum (Flowers July-Aug.)	Pale St. John's Wort.	Swamps and along streams Nova Scotia and Manitoba, Conn., N. J. (N)., Pa. and Minn.
H. Vergatum (Flowers July-Sept.)	Copper colored St. John's Wort.	Low grounds Del. to Ill., south to Fla.
H. Perforatum (Flowers June-Sept.)	Common St. John's Wort, Anglic Amber, Penny John, Rosin Rose Herb John.	Common save in far north and southern states. Original habitat Europe and northern Asia.
H. Maculatum (Flowers July-Sept.)	Spotted St. John's Wort.	Moist places Maine and Ontario to Minn., south to Fla. and Tex.
H. Graveolens (Flowers June-Sept.)	Mountain St. John's Wort.	Mountains of S. W. Va. and N. C.
H. Boreate (Flowers July-Sept.)	Northern St. John's Wort.	Wet soil Newfoundland to N. J. and Pa.
H. Mutilum (Flowers July-Sept.)	Dwarf or Small Flowered St. John's Wort.	Low grounds Nova Scotia to Manitoba, southern Fla. and Tex., in Va. to 3,000 feet.
H. Gynnanthum (Flowers July-Sept.)	Clasping Leaved St. John's Wort.	Low grounds south N. J., Del. to Minn., south to La. and Texas.
H. Majus (Flowers June-Sept.)	Larger Canadian St. John's Wort.	Moist soil Me. to Mich., N. J. to Neb.
H. Canadense (Flowers July-Sept.)	Canadian St. John's Wort.	Wet sandy soil Newfoundland to Manitoba, Ga., Ky., Wis., ascends to 5,000 feet in N. C.
H. Drummondii (Flowers July-Sept.)	Drummond's St. John's Wort.	Dry soil Ill. to Ga., west to Iowa and Texas.

In olden times the herb had great favor. Thus, in "Fuller's Pharmacopeia," 4th ed., 1730, it was an ingredient in a Balsamic Decoction, and in the "Collectannea" of W. Salmon, 1703, it formed part of a Traumatic Decoction. In "James' New Dispensatory," London, 1747, we find directions for the preparation of an "Oleum Hyperici" which was made by infusing the fresh tops in olive oil.

In "Thornton Family Herbal" (London, 1810), reference is made to its use in driving out devils and in hysteria and suppressed menstruation.

It is found in the section on Materia Medica in the "Edinburgh New Dispensatory" of 1794; in the "Pharmacopeia of the London College of Physicians," 7th ed., 1796; the "Edinboro Pharmacopeia" of 1774, and as an ingredient in the Theriac Andromachii in the "London Pharmacopeia" of 1772.

In American pharmaceutical literature it is referred to by Blair, in the "American Jour. of Pharmacy," ii, p. 23, and in "King's American Dispensatory" of 1871.



ST. JOHN'S WORT.

(This cut is used by courtesy of *The Country Gentleman*.)

REPORT OF A PHYSIOLOGICAL TEST OF ST. JOHN'S WORT IN THE MULFORD PHARMACOLOGICAL LABORATORIES.

The toxicity of the sample was determined by the Reed and Vanderkleed Guinea-Pig Method. This method consists in determining the minimum amount for 250 Gm. body-weight of guinea-pig that will prove fatal within 24 hours when the drug is subcutaneously injected.

RESULTS.

The doses given represent c.c. per 250 Gm. body-weight of animal.

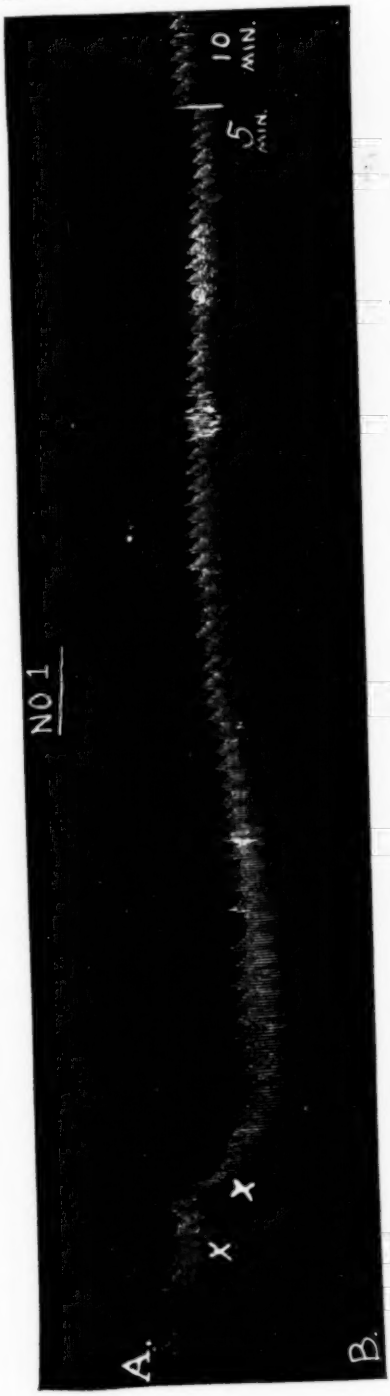
Dose.	*Results.*
0.05	Recovered.
0.075	Recovered.
0.08	Recovered.
*0.1	Died.
0.1	Recovered.
*0.1	Died.
0.15	Died.
0.2	Died.
0.2	Died.
0.5	Died.

The above results show that the minimum lethal dose for this preparation is 0.01 c.c. In other words, it has a toxicity equivalent to our standard fluid extract of digitalis.

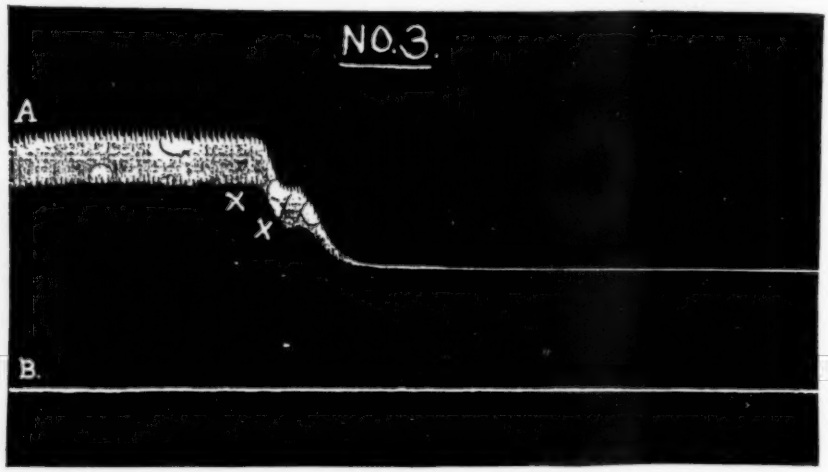
The charts on the following pages show the effect of F. E. St. John's Wort on the blood-pressure.

Tracing No. 1.—Weight of dog, 7.4 K. 1.0 c.c. of the fluid extract was injected into the femoral vein at X. Pressure recorded by means of a mercurial manometer. A = Blood-pressure, B = O line.

Tracing No. 2.—Weight of dog, 6.8 K. Injected 2 c.c. of fluid extract from X to X. The figures 5, 10, 15, etc., represent minutes after the injection.


NO 1
5 MIN.
10 MIN.
A.
B.

NO 2.
5
10
15
20
25
30
35
40
45
A.
B.



Tracing No. 3.—Weight of dog, 7.8 K. Injected 5.0 c.c. of Fluid Extract St. John's Wort between X and X.

The tracings show that this preparation has a very toxic action on the heart. 1.00 c.c. markedly reduces the blood-pressure; 2.00 c.c. almost paralyses the heart, and 5.00 c.c. causes immediate paralysis of the heart. Respiration continued for several minutes after the heart had stopped.

Post-mortem examination showed that the heart had been stopped in diastole.

"NOTES ON THE POISONOUS EFFECTS OF ST. JOHN'S WORT" (variety Hypericum Crispum). By George Ray, Professor of Agriculture in the Colonial School of Tunis.

There exists throughout the entire extent of northern Tunis a St. John's Wort (Hypericum Crispum, L.), an entirely different species from the common St. John's Wort (Hypericum Perforatum) so common in France.

It is usually designated by its Arab name (Hamra)—literally red—a designation due to the color of the dried plant. We find it in cultivated and uncultivated places and in pastures.

Bonnett and Barrett found it in Cyremia and in Asia Minor. The poisonous effects of "Hamra" have long been known in the Tunisian colonies, and its action justly feared. It attacks by

preference the bovine species, but we have seen cases of poisoning by it in goats, cattle and horses. These cases offer the curious peculiarity of manifesting themselves only in full light, and only on animals devoid of or possessed of but lightly pigmented skin. Clearly the action is photodynamic.

The symptoms are much as follows: Immobility, the animal's head falling low; the non-protected areas of skin become reddened, rapidly swollen without, usually, any general rise of temperature. In sheep, goats and cattle the ears are a common seat of the attack; they become enormously swollen, as also the eyelids.

In horses the local manifestations may be found on spots of skin devoid of pigment. The lesions quickly become the seat of acute itching, the animal biting or scratching them until the skin is torn, and the resulting excoriations often heal slowly, leaving traces of the attack for long periods, and the resulting cicatrix may remain hairless, especially on the forehead and ears. These lesions may become the seat of microbic infection (septicemia), often ending quickly in death. A common sequel of poisoning by "Hamra" in sheep is loss of sight.

As a rule, young animals are much more sensitive to the attack than are those of adult or old age. Dark-skinned animals are not incommoded and the condition is much more to be feared in sheep of light-colored fleece when the wool is short and thin.

Improved breeds are more liable to attack than the common animals of the country. We have satisfied ourselves also that white-skinned animals, stabled or otherwise protected from light, show no effects from feeding on "Hamra," and if we at once stable the affected animal on the first appearance of the symptoms it quickly regains its normal health. Indeed, this is by far the best and most successful treatment of poisoning by St. John's Wort. Unfortunately, in Tunis, it is a difficult method to employ, as the animals are often pastured far from the farm building.

Pasturage at night only presents in like manner many inconveniences. The Arabs use, with reason, solutions of tobacco or henna, which seem to render the skin less permeable to light.

The red tint caused by henna especially protects the epidermis against the noxious rays of light. Above all, we seek the destruction of the plant, a proceeding that is unfortunately well-nigh impossible, and we endeavor, as far as possible, to use animals of dark skin. We seek particularly the crosses with the Algerians, and breeding animals of white races are always selected with a view to the thickness and extent of the fleece covering the head as much as possible. Lastly, early shearing is to be recommended, allowing, as it does, a regrowth of wool before the time when accidents from this cause are most to be feared—the period following the reaping, when the animal is compelled to consume the Hamra in default of other green fodder. As to the cause itself of these accidents from the ingestion of Hamra by domestic animals, it is to be found in the existence in the tissues of the plant of a fluorescent substance, red in color, acting as a sensitizing agent to light, and which I have isolated during the year or more of my study of the question.

This pigment acts as a photodynamic agent, like fluorescine and its derivatives, eosine, erythrosine (Bengal Red), etc., of which the physiological action is actually known, thanks to the researches of Tappeiner and Raab, Dreyer, Ledoux, Lebard, Joldbauer and Tappeiner, Straub, etc. The phototoxic effects of these substances are to be connected, as recently shown by Rhinke, with the phenomena of buckwheat poisoning (fagopyrism).

The analogy of these photodynamic actions with the symptoms produced by " Hamra " is evident. The fluorescent red pigment which I have isolated from macerations of Hypericum Crispum has enabled me to produce at will, in different animals (rabbits, sheep, the characteristic phenomena described above). On the other hand, the essential oil contained in the leaves in the small proportion of 0.2 per 1000 is not sufficient to cause them, and only a strong dose—producing the common phenomena of intoxication usually caused by the essential oil, nervousness followed by somnolence—caused death in the rabbit in 24 hours, the amount administered being ten times the quantity normally contained in the daily ration.

Summary.—The poisoning by Hamra of domestic animals exposed to light in Tunis is due to the presence in the tissues of the plant of a colored fluorescent substance which I have isolated, and consider as the phototoxic principle of Hypericum Crispum.—(*Recueil de Medecine Veterinaire,* 30 Jan., 1914).

Note.—In my bibliographic researches I have found reports on the action of Hypericum Crispum which are of earlier date than those to which I have alluded—dating, indeed to about the middle of the last century. Thus Verheyen (1), analysing a series of foreign publications relative to the influence of certain agents on animals of diverse colors, writes as follows:

"Cryillo, Marinosci de Martina et Menni di Lecce, confirm the popular opinion which attributes to the Hypericum Crispum—commonly called Fumula in Naples and Sicily—noxious, even fatal, properties to white-fleeced sheep feeding on it, while those of black wool suffer no inconvenience; and this is stated to be the reason why black sheep only are pastured on the plains in the vicinity of Tarento, where St. John's Wort is common." Heusinger (2), in his researches in Comparative Pathology, reproduces these statements a little later.

It is strongly probable, moreover, that the curious photopathogenic action of St. John's Wort and buckwheat is not the sole cause of these phenomena, for the reason that other plants may produce analogous phenomena. Among the legumes which appear to possess this property we must mention certain vetches which have been accused of producing like conditions among horses (Steiner, Schrebe, Burmeister) and in cattle (Starkes, Erdt, Wilke) (3), the cases being characterized by swelling followed by gangrene of the non-pigmented skin; and it is probable that we must attribute to the same causes the cases reported by Le Mouroux (4) in black and white cattle.

Damman suggests the rôle of parasitic moulds on buckwheat. In 1907 Tappeiner showed that divers fluorescent substances, inoffensive in obscurity, become extremely toxic when exposed to sunlight (absorption of the ultra violet rays). Researches were then made in the matter, and divers observers (Busk, Œhmke,

Fischer) were able to establish that an alcoholic extract of the integument of the buckwheat seed and of the kernel is clearly fluorescent.

Fessler, moreover, thinks that the fluorescent material is identical with animal chlorophyll. With these data at our service we seem driven to admit that this material plays the part of a biological sensitizing agent, and the pathology of buckwheat poisoning may be stated as " a reaction to light of skin sensitized by the fluorescent matter contained in the plant," and we may understand that the symptoms may be slight or absent on those animals whose skin is pigmented. It is reasonable that this explanation may be applicable also to the toxic phenomena induced by St. John's Wort, as there is present in the flowering tops the seed capsules and the seeds, a substance blood-red in color (hypericine or hypericum red), which gives, according to Cerny, a fine fire-red fluorescence. These troubles quickly subside when this cause is removed (5).

REPORT BY M. RICHERT.

In October last (1913), M. G. Richert, M.V., forwarded to the laboratory of Professor Raulliet a sample of hay which he suspected of having caused a dermatitis of the forehead and lips of horses, causing at the same time an abnormal salivation. He requested a careful examination of the hay in order to determine whether it was composed in part of plants whose presence might explain the abnormal conditions. The sample proved to be meadow hay containing a considerable proportion of St. John's Wort (Hypericum Perforatum), and this was the only plant contained in the sample to which could be attributed the lesions observed. M. Richert was asked whether the lesions were found only on white horses or on portions of the skin deprived of pigment. Were they much exposed to sunlight? Did all the hay contain a similar proportion of St. John's Wort? The answers were:

The hay was fed to three horses:

1st. A black filly of 18 months, unbroken, and kept permanently in a dark stable. This animal was unaffected.

2d. An old gray mare (almost white with age), the head being lighter in color than the rest of the body and having some of the hairless nasal skin deprived of pigment. Only the whitest portions of this animal were attacked—the forehead and the bare, non-pigmented skin between the nostrils. The skin of the anal region (also deprived of pigment) showed similar lesions.

3d. A three-year-old gray gelding, son of the above. The forehead of this animal, the lightest part of the body, was the only portion affected.

These last animals (work-horses) were worked daily and their owner stated that the symptoms of pruritus were increased in proportion to the degree of sunlight to which they were exposed.

The hay was cut in the neighborhood from a hillside field, the soil being a heavy red earth. It was fed in full quantity for about three weeks before the commencement of the trouble, each animal receiving about thirty-six pounds daily. Unfortunately, as M. Richert was not called in at the beginning of the outbreak, he was unable to furnish a clear account of the lesions, they being obscured by rubbing and scratching. Of importance, however, is the fact that the symptoms quickly disappeared on ceasing to feed the hay.

"Facts of this character cannot be deemed absolutely rare, but up to the present they do not appear to have attracted much attention. However, analysis of certain prior observations shows clinical cases of like character." Thus Paugoué (6) reported, in 1861, the occurrence of somewhat grave symptoms in two percheron mare colts which had eaten a considerable quantity of alfalfa containing about 50 per cent. of St. John's Wort.

The symptoms were large, full and slow pulse, respiration deep and infrequent, entire loss of appetite, debilitated appearance, head carried low, disquietude (the animal never being quiet), staggering gait, the senses of hearing and sight much enfeebled, pupils dilated and the conjunctivæ markedly injected—a deep red color—tendency to back and to assume dog-sitting position, the hind legs flexed and head lying on the ex-

tended forelegs. At other times they assumed the sternal decubital position, the head lying on the forelimbs or on the litter. Finally they became comatose. One of the mares showed a skin devoid of pigment on forehead and face and on the nose, and the skin of these regions was a wine-red color. Nothing is said of the other, but we may infer a similar lack of pigment from the fact that she had also the red discoloration of the nose.

According to the practice in his time, the patients were bled and subjected to a treatment with refrigerants, and the symptoms disappeared on the following day; but the first-mentioned animal underwent a second attack, the trouble disappearing in three weeks under similar treatment. The author does not hesitate to ascribe the symptoms to the consumption of Hypericum Perfoliatum. He does not, however, make it clear as to the conditions the animals were placed in when the trouble developed. Were they exposed to sunlight?

We must imagine from the rapidity with which the symptoms disappeared under treatment that they were kept stabled.—(*Recueil de Med. Vet.*, 1914).

Law, under Erythema Caloricum (7), writes of what is evidently a similar condition, recommending the protection of the afflicted white skin by shade or painting with lamp-black, and in treating of "Fagopyrisinm" (8), (Buckwheat Erythema; white skin disease), while noting the protection accorded to dark-skinned animals by their coat and pointing out the necessity of sunshine as a factor, has nothing to offer as an exciting cause.

C. Baillet (9), treating of Hypericum Perforatum, writes:

"Animals do not eat it voluntarily. At Toulouse we endeavored, in June, 1862, to feed this plant to sheep. They would not, however, eat it unless pressed by hunger, but we have not observed that it produced any evidences of disease. The observations were made on animals permanently stabled and thus confined in a place more or less dark.

"The common St. John's Wort is commonly believed to cause disagreeable eruptions on cows' udders and on the feet of white-haired animals. This species and the spotted St. John's Wort

(Hypericum maculatum) were brought into the department by Dr. G. W. Bready, from Norwood, Md., who stated that five horses were poisoned in May, 1898, by eating meadow hay which contained nearly 50 per cent. of these plants. One horse died from the effects of the poison and two were killed to prevent their further suffering (10).

"Trabut (11) states that in Tunis the Hypericum crispum L. causes a disease of sheep, 'Hamra.'

"Lewin (12), a German toxicologist, shows also that Hypericum crispum produced fatal poisoning when eaten by white-fleeced sheep, the symptoms being an acute dermatitis followed by convulsions.

"This species, like Hypericum maculatum, is not found in the French flora, being native to southern Europe and northern Africa."

This limits the direct data that I have been able to gather concerning the noxious properties of St. John's Wort; but it is most probable that diverse other observations, published by veterinarians regarding similar conditions, are to be referred to this family of plants. I would speak especially of accidents attributed to alfalfa, because we are familiar with the fact that St. John's Wort is often abundant in old fields of alfalfa. Such accidents have been reported by Kuhn, Bigoteau, Kovanyi and Marek in cattle and by Burmeister in the horse (13).

The symptoms in cattle resemble those set up by feeding potato refuse from starch factories, the eruption usually beginning on the hind fetlocks and sometimes on the internal face of the thighs, the mammary glands and scrotum, more rarely on the front legs, the breast and flanks. Besides the thickening and redness of the skin, a vesicular eruption discharging an abundance of serum is observed, forming crusts which crack when dry. Under these crusts a considerable amount of pus may accumulate. This condition gives rise to pain. It is true that similar still more concordant observations have been made regarding symptoms following the ingestion of clover, although St. John's Wort is somewhat rarely found mixed with it.

Cases in horses due to the consumption of Swedish clover, alsike (Trifolium Hybridum), have been reported by Damman, Haubner, Zipperlen, Michael, Heimann, Kleine, Friedberger and Frohner. Red clover (Trifolium pratense) is implicated by Kovats, and Trifolium elegans by Dessart. Cases in cattle due to clover pasture by Berndt and Nevermann, and from feeding red clover and cases in clover-fed sheep have been reported by Berndt and Nevermann.

Clover poisoning (Trifoliose Kleekrankheit) is characterized by inflammation of white skin of the head, limbs and occasionally of the buccal mucosa, with or without digestive or nervous troubles.

Upon the whole, these accidents may be assimilated to those which have for a long time been attributed to feeding on buckwheat, a condition known as fagopyrisme. We know that two principal hypotheses have been formulated regarding their pathology. Schindelka claims that buckwheat, under certain conditions of culture or under the influence of certain microbes, produces toxins in the digestive tract. These, absorbed and carried by the circulation, cause in the non-pigmented skin, under the influence of the chemical rays of the spectrum, a vasomotor disturbance and alteration of the vascular walls.

ON THE INFLUENCE OF LIGHT ON WHITE AND PIGMENTED SKINS IN THE TROPICS.

In the sun, the white skin is always slightly hotter than the brown, and with the brown skin the fall in temperature after a certain time of exposure is more pronounced. The heat absorbed by a brown skin is greater than the heat absorbed by a white skin in the same length of time; therefore, it would seem as if the rise in temperature should take place more quickly in colored than in white skin. This has been experimentally proven to be true with dead skin by P. Schmidt (14) and Eykmann (15). Yet just the reverse is true in living men. Brown skin will absorb a greater quantity of rays than white; but, being more quickly heated, the point where sweat secretion begins is reached

earlier, and as soon as this point is reached the skin is cooled by water evaporation. With the white skin this process takes place more slowly, and it must be for this reason that the brown skin, while absorbing more heat, is found to have lower temperature than the white skin under similar conditions. The regulatory apparatus of the brown is more sensitive and works more promptly and successfully. This statement deserves attention because the experiments on dead skin only served to convey a wrong impression of the behavior of colored and white skin when exposed to the sun's rays (15).

Swart (16) calls attention to the fact that plants in the sunlight of the tropics seek to protect themselves by the production of a red color (erythrophyll) (17), the absorption spectrum of which has a band in the violet. In a journey to Java he observed that the red color of the leaves was more common and marked in the low, tropical valleys than higher up on the mountains. In the cloud-covered belt it was entirely absent, but above the latter it again appeared (18).

By means of erythrosin (Erythrosine=$C_{20}H_6O_5I_4Na_2$, Bengal Red=$C_{20}H_4Cl_2I_4O_5K_2$), Hertel was able so to stain the cells of living organisms that their power of absorption for waves of greater length than 280 mm. was markedly increased. The introdution of this experimental modification enabled Hertel to demonstrate that even the visible light rays could bring about destruction of tissue in the same time as the ultra-violet.

The physiological action of light rays is, therefore, not dependent upon any specific region of the sun's spectrum, the wave length is only of importance in such degree as the total energy, and the power of absorption is determined thereby. A plant, for instance, for the existence of which light is absolutely necessary takes on a color which is complimentary to the incident rays. For example: Oscillaria sancta colors red in green light and green in red. Light also has an unfavorable effect on the phenomenon of cell division, but this only takes place with higher intensities. Different pigment cells have a different absorptive power for incident light, according to its wave length, but the ultra-violet are

equally absorbed by all; therefore, the latter differ markedly from visible light, in which the absorption maxima, according to the color, lie at diverse and far-removed parts of the spectrum.

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THE ARMY MULE INDISPENSABLE—The following extract from the *National Tribune,* Washington, D. C., of October 15, clearly demonstrates the impracticability of the automobile as compared with the horse or mule in actual service on the battle-field, where set routes over good roads cannot always be chosen. "The automobile has not put the serviceable Missouri army mule out of commission by any means. A detail of French officers are at St. Louis proposing to spend $12,000,000 for cavalry horses and mules. The motor car is an admirable thing for good roads and can beat the mule all to pieces on the asphalt or macadam, but a motor cannot jump a ditch nor pull itself out of a mud hole, nor can it be turned into the nearest pasture field nor make its breakfast off of cottonwood poles."

IS LOST WITHOUT THE REVIEW.—Dr. Grover C. Love, of Indiana, says: Enclosed find check for the REVIEW—I am lost without it"

SURGICAL ANAESTHESIA.*

By O. V. Brumley, Professor of Veterinary Surgery and Obstetrics, Ohio State University.

A modern surgical operation requires several things for its successful completion. The results of surgical manipulations depends firstly, upon the skill of the surgeon; secondly, upon the proper control and restraint of the animal; and thirdly, upon the proper treatment and handling of the patient after the operation is completed. It is becoming more apparent as our knowledge of surgery, anatomy, pathology and physiology is increased, that in order to obtain results following surgical operations they must be done under the most favorable conditions. It is impossible to do skillful work unless the patient be properly prepared, properly restrained and properly anaesthetized. Acrobatic surgery is no longer a safe proposition, as all surgeons are not acrobats, nor are all acrobats surgeons. Therefore, in our opinion it is quite essential for satisfactory surgical work to have the patient restrained and properly anaesthetized.

General anaesthesia means a complete loss of sensation, and is produced by the use of drugs acting upon the central nervous system. In veterinary practice we employ two classes of drugs to produce general anaesthesia, namely:

Volat le substances such as chloroform, ether, etc., and non-volatile or fixed substances such as chloral hydrate, cannabis, morphine, etc. Anaesthesia, or narcosis is the result of a special action exerted directly on nerve centers by the agent used, therefore it is necessary to insure a sufficient quantity of the anaesthetic to arrive at those centers. Volatile substances, introduced in a state of vapor into the respiratory tract, are freely absorbed by the blood circulating in the lungs, which blood, passing to the left heart and general arterial system, rapidly produces

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anaesthesia. On the other hand, non-volatile or fixed anaesthetics when administered by the various channels, such as from mucous membranes, the jugular vein, subcutaneously, or intraperitoneally must pass through the general circulation direct to the nerve centers, producing in the majority of cases almost direct sedative action without any appreciable degree of stimulation.

When anaesthetics are administered *via* the respiratory tract, *i. e.,* the volatile substances, they produce a series of phenomena which are rather constant and characteristic.

1. Period of excitement.
2. Period of anaesthesia, (surgical period).
3. Period of intoxication or collapse.

1. The period of excitement is due in the first place to the action of the anaesthetic vapor on the nerve terminations in the mucous membrane of the upper respiratory passages, and to the paralyzing action upon the cerebral inhibitory centers, and in the second place due to the action of these vapors on the central nerve centers themselves. This period is very pronounced and is characterized by hyperaesthesia of the sense organs, excitement, violent struggling, acceleration of the respiration and circulation, mucous membranes injected and dilated pupils. These symptoms gradually recede, the heart's action becomes slower, respiration becomes easier, more regular and more deep. The pupils gradually contract, excitement grows less and the animal passes into a deep sleep.

It has been our experience that this is a rather critical stage in anaesthesia and must be watched carefully. Animals with respiratory or circulatory complications may have respiratory or cardiac syncope, or asphyxia from spasm of the glottis. We have observed these complications in several cases out of several hundred anaesthetized.

The second period of anaesthesia is characterized by complete suspension of activity in the nerve centers, *i. e.,* the cerebral lobes and mesocephalon, reduction in the activity of the centers in the medulla oblongata. The animal is plunged into deep anaes-

thesia. The excito-motor centers are paralyzed, the muscles relax, the limbs lie inert, the respiration is slow, and the movements of the chest wall are diminished, and abdominal movement more pronounced. The heart's action becomes more rapid on account of paralysis of the moderator center, but the pulse should remain full. Vision is no longer coordinated. While the pupils remain contracted and immobile, reflexes cease in the various regions.

We have frequently observed in our experience that sensation does not disappear at the same time in all tissues, being last retained by the organs under spinal control. It sometimes happens that when anaesthesia appears complete that struggling often results immediately the knife touches the diseased region. Inflamed parts retain their sensibility much longer than healthy tissue.

This is the period in anaesthesia in which all surgical work should be done. Mistake is often made by veterinarians in starting to operate too soon. This means that in operating before this period is reached the animal is in a state of hyperaesthesia and therefore more exciteable than if no anaesthetic had been given. We have frequently kept the animal under anaesthesia for a couple of hours. This is necessary under some conditions.

The third period of anaesthesia, intoxication or collapse, is the stage that we all want to avoid. This is characterized by either a sudden or progressive diminution of respiration and circulation and a sudden dilation of the pupil. The respiratory movements become irregular and shallow, the pulse small, rapid and irregular. Finally the vital centers in the medulla become paralyzed, the respiration ceases, pulse imperceptible and the animal dies from respiratory syncope. These symptoms so described, vary according to the kind of anaesthetic employed. With the volatile anaesthetics (chloroform, ether, etc.) the first period of excitement is more marked than in the non-volatile anaesthetics, where there is scarcely any symptoms of excitement present except in certain individuals after morphine or cannabis has been given.

Now let us consider briefly anaesthesia in the different animals, the kind of anaesthetic employed and the general technique of its administration. From a practical standpoint it is necessary for us to consider those that show the greatest efficiency, and the least degree of danger, and also those that are the easiest of administration.

ANAESTHESIA IN THE HORSE.

I think we are all agreed that of all the volatile anaesthetics, chloroform will come nearer fulfilling our requirements than any of the others. Anaesthesia can be produced in horses by chloroform without any great degree of danger, provided certain precautions are observed. We have employed chloroform rather extensively for horses and have had excellent results. A few cases required prompt treatment, such as heart and respiratory stimulants, tracheotomy, etc. Out of several hundred cases during the past 5 or 6 years we have lost none due directly to the chloroform. Methods of administering chloroform. There are two general methods we employ, and think it best to describe them separately.

The first method:

A rather thorough examination is made to determine the heart's action, also whether there might be some impediment to the respiration. This we consider a very important thing and if observed will often prevent serious complications and disagreeable after-treatment. We have made it a general rule that in all cases where there are any indications of heart or respiratory weakness to give ½-1 grs. of atropine one hour before administering the anaesthetic. This treatment will overcome to a great extent the depressant action of the chloroform on these vital organs. Lately in conjunction with this atropine treatment we have been administering with it a minimum dose of morphine to relieve some of the excitant symptoms, so far this has proven so satisfactory that I think we will continue this practice.

The quality of the chloroform should be carefully looked after. Use nothing but the best (Squibbs). It is the cheapest

and most satisfactory in the end, being less depressing to the respiratory and circulatory centers.

Various methods have been devised for administering the chloroform. We prefer using simply a towel wrapped around the nostril and at each inspiration the chloroform is dropped on the towel and is quickly taken in with the air. We have used also a regular chloroform inhaler, but this method, to be described, has not been found so satisfactory.

Some advise strongly for withholding food for 6-12 hours previous to anaesthesia, but we have not found it so very essential in the average cases. In very fat, plethoric animals it would be advisable, or in cases where it can be done conveniently. However, we do not think this such a vital matter as some of the others.

Procedure:

After considering all of these things previously mentioned, and having all of the material ready, the animal is cast or laid on the table. All of the unnecessary straps and ropes should be removed so as to allow free respiration. Use a large halter so that the throat can be kept free. Keep the head well extended and level, *i. e.,* do not elevate the nose. The lower nostril is plugged with gauze, the upper nostril coated with vaseline. The towel is wrapped firmly around the nose up to the halter band. The chloroform then is gradually dropped on the towel at the inspiratory movements. It is administered until anaesthesia is established. It will take usually 15-30 minutes to produce complete anaesthesia. We have always favored rather slow administration of the chloroform for the reason that the stages of anaesthesia are more easily controlled. It also requires less chloroform when administered slowly.

Complete anaesthesia is characterized by the disappearance of the oculopalbebral reflex and contraction of the pupil. At this stage should the corneal membrane be touched no movement of the eyelids takes place. At this stage remove the chloroform and as soon as the corneal reflex becomes apparent more can be given.

The anaesthetist should always observe the following:

(a) Watch the corneal reflex.
(b) Watch the pupil of the eye.
(c) Watch carefully the respiration.
(d) Watch the pulse.

As soon as the operation is completed and the hopples and towel removed, allow the animal to lie quietly for a few minutes, when it will arise without much difficulty.

Fatal symptoms occasionally develop and should very promptly be attended to. The greatest dangers are from asphyxia and syncope. Asphyxia usually occurs either at the excitement stage when the chloroform is administered too rapidly, or at the end of the anaesthetic stage when anaesthesia is pushed too far.

In syncope, which is indicated by irregularity of the pulse, dilated pupils, weak heart's action, the head should be lowered as far as possible, artificial respiration commenced, and cold water dashed on the head. Subcutaneous injections of strychnine or nitroglycerine may be given.

In spasm of the glottis, which is characterized by loud snoring sound, very labored respiration and cyanotic membranes, perform tracheotomy at once. This will relieve the difficulty.

We are sure that this method can be used successfully without any great amount of danger.

Second method:

During the past few years there has been a tendency among some veterinarians to administer chloroform to animals in the standing position. This in some respects would be an ideal method, and I can see no reason why it cannot be employed more extensively than what it is at the present time.

The procedure is as follows:

We have used this method in a few cases and it has been quite satisfactory. A nose bag or inhaler is essential. It should be adjusted to fit rather snugly over the nose, and should have a removable bottom so that the chloroform could be placed in the

inhaler after everything is ready. Owing to the excitable stage of the chloroform the animal should be placed in a roomy box stall well bedded with straw or the patient may be taken outside. Strap up one front foot and have the head secured by assistants or by rope through ring in wall. The chloroform (using about 2 oz. on cotton) is placed in the inhaler. Symptoms of excitement are of short duration, the animal gradually becomes weaker, the muscles relax when he will go down and the operation can proceed without hopples. We consider this method a little more dangerous from two standpoints: 1st, danger of the animal becoming injured during the excitable stage; 2d, more danger of asphyxia or syncope from the rapid anaesthesia. The same preparation before hand and the same precautions should be observed as in the other method.

We do not believe that ether is as satisfactory for anaesthetic purposes in horses as chloroform, so will not consider it now. A great deal has been written and said about chloral hydrate as an anaesthetic for horses. It has been our good fortune to try out this drug thoroughly and can say that it is not a safe anaesthetic when administered intravenously. There is entirely too much danger of phlebitis at the point of injection. We have had some bad results following its use, although was extremely careful in its administration.

However, it is being used quite successfully for partial anaesthesia as a rectal injection made up in the form of an emulsion with glycerine and acacia 1-4. Use 1-3 ounces, varying dose with size of animal.

General anaesthesia may be produced in horses by using chloral as an intraperitoneal injection. Technique is as follows: A large syringe with a generous sized needle is sterilized, the hair should be removed from a small area on the lateral side of the abdomen, the skin thoroughly washed and disinfected by painting surface with tincture of iodine. The solution made by dissolving ½-1 oz. of chloral hydrate in double the amount of diluted glycerine or 10 per cent. saline solution. The needle is then inserted in an inward and downward direction. The

needle is moved about to be sure that it has not entered the bowel. The solution is then injected. Anaesthesia takes place in 15-35 minutes. In cases where there is danger of too profound anaesthesia strychnine or pilocarpine should be given.

Cannabis indica, owing to its ease of administration, and rather satisfactory results, is now being used extensively to produce partial and complete anaesthesia. During the past three years we have used cannabis indica rather extensively, especially where we desired only a partial anaesthesia.

Procedure as follows:

Careful disinfection of the skin over the jugular region, needle and syringe should be sterilized, 4-7 c.c. of the fluid extract is then injected. Partial or complete anaesthesia is established in 20-40 minutes. We have observed no marked unfavorable symptoms except in a few cases where excitant symptoms were noticed due to individual susceptibility. In such cases chloroform administered in small amounts produced a very satisfactory anaesthesia. This anaesthetic has much to recommend it to the veterinaarian. Morphine must be considered an unsatisfactory anaesthetic by itself owing to its inconstant action.

ANAESTHESIA IN RUMINANTS.

General anaesthesia is seldom resorted to in ruminants except in obstetrical manipulations, and in some major surgical operations. Chloral hydrate administered *via* mouth well diluted in doses of 1½-2 oz. has proven very satisfactory, narcosis lasting for 1-2 hours. No bad results have followed its use. Chloroform is also used in cattle, employing the same methods and precautions as in the horse. The action of chloroform is slower and requires more in the ox than in the horse. We have found that in cases of dystokia in cattle anaesthesia is very important to relieve the severe straining and to relax the tissues.

ANAESTHESIA IN SWINE.

Swine are very susceptible to chloral hydrate, which makes an ideal anaesthetic when once the dose is regulated properly.

We have employed chloral hydrate rather extensively for ovariotomies, hysterectomies, etc., and have only praise for its action. Anaesthesia is established in the following manner:

The rectum is emptied of its contents by injecting a few ounces of warm water and allowing it to discharge. The chloral emulsion 1-4 in acacia and glycerine is used and 1-1½ drams per 50 lbs. in weight is injected as high as possible with a long-nozzled syringe. Anaesthesia is complete in 15-30 minutes and will last for 1-2 hours. Should the anaesthesia become too profound, a small dose of strychnine should be administered with inhalations of ammonia.

Chloroform is also a very satisfactory anaesthetic, and is administered as described in the other animals.

ANAESTHESIA IN THE DOG.

During the past 15 years we have anaesthetized approximately 5-6,000 dogs of all ages and sizes. Morphine has been used almost exclusively for these animals with very excellent results. Dogs are very susceptible to the narcotic influence of morphine, and profound anaesthesia is very promptly and accurately produced.

Methods of Administration:

From ¼-3 grains of morphine are used, depending upon the age and size of the animal. This is dissolved in sterile water and injected subcutaneously with a sterile hypodermic syringe. In the course of a few minutes it induces some vomiting owing to the morphine being deposited out on the mucous membrane of the stomach. This is quickly followed by a progressive narcosis ending in a profound anaesthesia in the course of 15-30 minutes. Apparently large doses can be given without any great danger. We consider it especially valuable for these animals on account of its ease of administration, its safety, its constant action, and a rather long period of anaesthesia which is important in keeping the animal quiet following surgical operations. There is no apparent bad after-effects. Occasionally you will find an indi-

vidual animal that will not readily go under its influence, instead show excitement, yelping, increased respirations, etc. These are the very rare exceptions, and should they occur use a small amount of chloroform to finish the anaesthesia. Be careful and do not push the chloroform too far as there is danger of asphyxia or syncope.

In case the anaesthesia should become too profound following an operation, small doses of strychnine (1/60-1/30 grain) are indicated and inhalations of ammonia given to stimulate the respirations.

H. M. C. compound has been used rather extensively, but personally have not been able to get as satisfactory results as some have claimed for it. We have used it in conjunction with small amounts of chloroform with very satisfactory results. However, others have used it very successfully and it should be considered one of the good anaesthetics for this animal.

Chloroform is used also for a general anaesthetic in dogs, but it has not proven to be as safe or convenient as either morphine or H. M. C. compound.

Ether has been employed to a large extent and has proven to be a very satisfactory anaesthetic for the dog. A good way to administer it is to saturate cotton or gauze with a couple of drams of the ether, place it in a small conical vessel, and having the animal restrained place the cone over the nose and in a few minutes complete anaesthesia will be established. Very little danger follows providing the anaesthesia is not pushed too far. In some cases where rapid recovery is desirable it is the most satisfactory anaesthetic as recovery will be complete in the course of an hour or so.

In cases threatening syncope or asphyxia, artificial respiration should be used and kept up for at least 30 minutes. Ammonia stimulants should be administered. Followed later by 1/60 grain of strychnine.

It is always considered safer when chloroform or ether are used in the dog as a general anaesthetic to administer 1/10 grain of atropine about 30 minutes before beginning the general anaesthesia, to sustain the respiratory and circulatory centers.

ANAESTHESIA IN THE CAT.

After a long series of cases in this particular animal we do not hesitate in saying that ether is by far the most reliable, and least dangerous of all the anaesthetics. The cat being a highly sensitive animal, and very susceptible to all drugs acting on the central nervous system, we have found it highly important to induce anaesthesia as rapidly as possible, and also to have the anaesthesia disappear as early as possible, after the operation. In considering these particular points ether will bring about these results much more satisfactorily than any of the others we have used. Consequently we consider ether a perfectly safe and almost ideal anaesthetic for the cat.

Procedure as follows:

The animal is restrained on the table or by some other practical means, and ½-1 dram of ether placed on gauze or cotton and inserted at the bottom of a conical graduate (say 60-120 c.c. graduate), this is then placed over the nose. Some struggling ensues for a few moments, but anaesthesia is rapidly established and is very profound in the course of 5-10 minutes. As soon as anaesthesia is established the ether should be taken away and further administered as the occasion might require. It is perfectly safe to keep them under the influence of ether for 1-2 hours, providing care is used in its administration. Danger of asphyxia or syncope only occurs in case the anaesthesia is pushed too far, or some complication of the respiratory or circulatory system is present. In case danger of asphyxia threatens, the ether should be removed at once, plenty of fresh air allowed, and artificial respiration begun at once. Artificial respiration should be persisted in for at least 20 to 25 minutes. We have seen a few cases where success crowned our efforts in resuscitation after 15 to 20 minutes application of artificial respiration. Further, ammonia should be administered by inhalation. The use of chloroform has not proven so satisfactory on account of its medullary depressant action. However, it is being used by some veterinarians with very excellent results.

Morphine for these animals is not satisfactory owing to its inconstant action and the danger of excitant symptoms being prolonged. We have observed some remarkable excitant symptoms following morphine injection in cats.

ANAESTHESIA IN BIRDS.

This is best accomplished by placing the bird under a bell jar or covering the cage with some impervious cloth, and saturating some cotton with small amount of chloroform which is put in the cage. In a few moments anaesthesia will be produced. As soon as anaesthesia is established the chloroform should be removed; later, more can be administered if necessary. Birds can be successfully anaesthetized by this method without much danger.

In conclusion will say that, general anaesthesia is a practical and safe proposition for the practitioner, by far less dangerous in the long run than to try and operate without its use.

It is a humane method.

It adds to the surgeon's skill by properly restraining the animal.

It will increase the surgeon's efficiency.

Results of operations will be more satisfactory and by its use the owner will see the advantage of such treatment and the veterinarian's prestige will be increased.

Would recommend the following general anaesthetics.

1. For horses:
   (a) chloroform 1-10 oz.
   (b) cannabis (Fld. Ext.) 4-7c.c.

2. For the ox:
   (a) chloral hydrate (per os) 1½-2½ oz.
   (b) chloroform 5-12 oz.

3. For dogs:
   (a) morphine (sub-cut) ¼-3 grains.
   (b) ether.
   (c) H. M. C.
   (d) chloroform.

4. For cats:
   (a) ether.

5. For birds:
   (a) chloroform.

6. For pigs:
   (a) chloral hydrate.

It is our desire to see general anaesthesia more generally employed by the practitioner of veterinary medicine, and there is no reason why it should not be employed to the same degree as in human surgery.

SANITARY WATERING PLACES FOR HORSES AND THE CONTROL OF GLANDERS IN MISSOURI is the title of Monthly Bulletin No. 9 (*Handy and Practical Farm Library,* published by the Missouri State Board of Agriculture), by D. F. Luckey, State Veterinarian of Missouri. This circular goes carefully into every phase of the control of glanders, and as the heading suggests, its author fully appreciates the part public watering troughs play in the dissemination of this disease. Dr. Luckey acknowledges the great assistance rendered by the co-operation of veterinarians engaged in general practice. The circular says: "The sanitary hydrant now in use in Kansas City was devised by the members of the local Kansas City Veterinary Association and the Team Owners' Association. The bills for building models and drawing plans were paid by these associations, and principally by the farmer. The hydrant was not patented. On the other hand, the Veterinary Association offers to furnish free blue prints for building it. These may be obtained by writing Dr. Atvill Byrd, 2406 East 9th street, Kansas City, Mo. This hydrant was adopted as official by the National Team Owners' Association at its convention in Minneapolis, July 7-9, 1913."

CERTAINLY THERE WITH THE GOODS.—Dr. T. G. Fultz, Pella, Iowa, in renewing his subscription to the REVIEW, says: "It was certainly there with the goods the last year. Success to you in your endeavors to supply us with such a periodical."

SKIN DISEASES OF THE DOG.*

H. J. Milks, D.V.M., Ithaca, N. Y.

Skin diseases may be roughly divided into two groups, parasitic and non-parasitic. The first group may be further divided into those caused by animal parasites and those caused by vegetable parasites. Taking up the non-parasitic diseases first we find eczema the most frequent and indeed the most common of the skin diseases of dogs.

Eczema is a non-contagious inflammation of the skin characterized by any or all the results of inflammation, either at once or in succession, as erythema, papules, vesicles or pustules. It is accompanied by infiltration and itching to a greater or lesser degree, and terminates in a serous discharge with the formation of crusts or by desquamation. It is classified in various ways, acute and chronic, moist and dry, according to its manifestations, as erythematous, papular, vesicular, etc., or according to its location and extent.

Causes:—Eczema is usually the result of some external influence upon the skin; such as irritants, rubbing, pressure from collars or muzzles, parasites as fleas and lice, and dirt accumulating in those places which the animal cannot keep clean. This factor accounts for the frequent occurrence of the disease upon the back. Strongly alkaline soaps and too frequent bathing are often causes because they not only soften the skin, but also serve as irritants. Lastly the character of the food has some influence as is shown by the restriction of the diet in pampered dogs and those fed upon highly spiced food.

Symptoms:—The symptoms are so well known that it is scarcely worth while to repeat them. They include all the phenomena mentioned previously, and since they are but different

*Read at the meeting of the Central New York Veterinary Medical Society, Syracuse, June, 1914.

stages of the same disease we may see them all upon the same animal, and frequently these are so changed by the irritation of the animal that it is difficult to discover any of them. As a rule certain parts of the body appear more predisposed to the disease, as upon the ridge of the back where the affection may start at the root of the tail or neck and extend in all directions, or on the outer side of the extremities and rump. It is not so frequently seen upon the tender thin skinned parts, as the lower abdomen, chest, inside of thighs, etc., but these locations are not in any way immune to it. The disease may pass through all the succeeding stages or heal in any one of them. Healing may take place promptly or the disease may last for weeks and months or even be incurable.

Diagnosis:—It must be particularly diagnosed from the different forms of mange and ringworm. The differential diagnosis will be further discussed under the head of mange.

Treatment:—The treatment of eczema varies greatly, but some principles should be observed. First of all there is no specific. What will work well in one case may be worse than useless in another. The indications are to remove the cause, endeavor to check the inflammation and to maintain the general health. The diet of pampered dogs should be restricted and the excretions regulated. If the bowels are constipated, they should be loosened with a mild purgative, if the urine is scanty, an alkaline diuretic might be of service. Arsenic is claimed valuable by some, but is contradicted by others except in cases of debility.

Local treatment is the one that we must look to for most service. It involves one principle particularly, namely, that nothing irritant should be applied upon acute eczema, while the chronic needs some stimulation as from the use of tar. Soap and water should be avoided as much as possible in the acute variety. Solutions of boric acid, or water containing bran, oatmeal, or starch may be substituted for cleansing purposes, while in the chronic variety, soap may be of decided benefit as a stimulant. The crusts and scabs which are always present should be removed to get the best results from the treatment. This can be done by the

use of oily preparations, starch poultices or some of the agents mentioned above. Pastes and ointments should be removed by softening with oil and not by the use of soap.

Acute Variety:—Protect the parts from water, soap and air, remove the scabs as mentioned above; for erythema use dusting powders, talcum, lycopodium, boric acid, Zinc oxide, etc., as in the following:

Pulveris Camphorae .....1 dr.
Zinc Oxide .....2 dr.
Amyli .....1 dr.
M. Ft. Pulveris,

Lotions which leave a sediment after evaporation are also valuable, such as black wash or the following:

Resorcini .....ss. dr.
Bismuthi Subnitratis .....2 dr.
Glycerini .....2 dr.
Liquoris calcis q.s. ad.....5 oz.
M. Ft. Lotio.

Or if ointments are preferred the following may be useful:

Unguentum Ammoniati Hydrargyri, calamine ointment, salicylic acid in oil, 2 to 5 per cent., zinc oxide ointment or a paste as:

Zinci Oxidi 10
Petrolati 2
Amyli 28
M. Ft. Unna's zinc paste.

Thymol or phenol may be added if the itching is severe.

In the weeping or moist variety where the discharge is excessive, astringents must be used. These may include lead plaster, tannic acid or silver nitrate in 5 per cent. solution. We often get very gratifying results from the use of a 5 per cent. solution each of tannic and salicylic acid in alcohol. After the discharge has ceased, the treatment should be changed to unirritating ointments or lotions.

Chronic:—Here the scabs and crusts should be removed with soap and water and some stimulation employed. It is in this variety of the disease that preparations containing tar, creolin, etc., are valuable. It should be always kept in mind that the more chronic the eczema, the more benefit will be received from applications of tar, creolin, cade, etc., also, that some animals are unable to stand the treatment with tar, and consequently the condition is made worse instead of benefitted. The treatment also varies somewhat as to the character of the eczema, i. e., whether it is moist or dry, etc. When moist the same preparations are to be used as mentioned for that condition in the acute variety, and when dry the coal tar preparations, tar, etc., oil of cade, is equally valuable with oil of tar, but has the advantage of a more pleasant odor.

Olei Cadini .....1 dr.
Acidi Salicylici .....10 gr.
Zinci Oxidi .....2 dr.
Amyli .....2 dr.
Petrolati .....4 dr.
M. Ft. Ung.
Sig. Apply twice daily.

Vienna Tar Liniment.

Picis Liquidae
Sulphuris Praec. aa.....3 oz.
Saponis Mollis
Alcholis aa.....4 oz.

or

Picis Liquidae
Saponis Mollis.....2
Alcoholis Dilutus.....1

MANGE

Mange or scabies is probably the next most common skin disease of the dog. It may be defined as a specific contagious skin

disease caused by the mange mites, manifested by more or less severe itching and violent eczematous inflammation of the skin.

There are two varieties of mange in the dog, named after the specific mite which causes them, the sarcopic or principle mange, and the symbiotic. To these for ease of discussion the follicular may be added, although it is not usually classed as a true mange.

The sarcoptic mites burrow under the upper skin and feed upon the young cells of the rete malpighi. They also propagate in these burrows and cause intense itching. This is the most common parasitic skin disease of dogs. It most often attacks the ridge of the nose, base of the ears and eyebrows but may start in other regions as, upon the lower abdomen, chest, elbows, or in fact anywhere. It spreads very rapidly so that the entire surface of the body may become affected within a month, but its aspect varies somewhat with the resistance of the host. The symptoms simulate those of eczema, starting with small red spots, visible only upon the unpigmented parts of the body. These spots may be succeeded by papules vesicles or even pustules which may burst and leave large discharging areas. The vesicles and postules soon dry up under grayish yellow crusts, while the skin scales, the hair falls out and bald spots appear. The skin finally thickens, becomes wrinkled, and often cracked and fissured by the rubbing of the animal. Not all cases, however, follow the above lines. Some may exhibit only the dry stage, which is shown by desquamation of the epidermis. The changes produced in the skin are always accompanied by intense itching which increases with warmth or exercise. This keeps the animal in a continual state of unrest and if treatment does not relieve, it may die of cachexia.

Diagnosis:—The diagnosis must be differentiated from eczema and follicular mange with which it is most likely to be confused. Besides the general symptoms of each, we have in the sarcoptic, violent itching, especially at night, commencement of the disease upon the head, ease of transmission to other dogs, wrinkled appearance of the skin and baldness, accumulations of scabs and dirt, and preference of the disease for the tender parts of the skin, and localization.

In eczema the disease spreads more rapidly, the itching is often severe at all times; there is no localization, and a preference for other parts than just mentioned. Furthermore, eczema usually responds readily to treatment, a factor which is diagnostic. It may be confused with the squamous form of follicular mange from which it is differentiated by lack of itching in the latter. A positive diagnosis always depends upon finding the parasite in scrapings from the diseased parts, but this is not always easy, so that any skin disease, if apparently contagious, accompanied with intense itching and other symptoms mentioned above, may be regarded as mange, even though no parasites can be found.

Prognosis and treatment:—The prognosis is fairly favorable, although a cure is not always easy, and many dogs are unable to stand the treatment. Generally it is necessary to apply the treatment to the entire body after first clipping the hair. Usually one-fourth of the body is treated daily and after the entire body has become covered, a bath is given. The scabs must be removed with soap and then washed with water, but care should be taken not to apply toxic drugs directly to the raw surfaces on account of the danger from absorption. The usual parasiticides are creolin, tar, sulphur, oil of cade, crude oil and balsam of Peru, as

Creolini
Saponis Mollis aa.....50
Alcoholis .....½—10
M. Ft. Sol.

Sig. Rub in daily on one-third of the body. A cure is said to result in from two to three weeks, or the tar and similar preparations used in chronic eczema may be used. Peruvian Balsam is good, but is expensive. It is usually diluted with alcohol.

Symbiotic mange or dermatophagus is found exclusively in the external ear passages, and is associated with otitis interna. These mites cause little or no inflammation. The otitis is a secondary affection due to soiling and injuries from shaking the head. The symptoms are the same as those for canker. It responds readily to treatment for that disease.

FOLLICULAR MANGE.

Follicular mange is a contagious disease due to the presence of the acarus mite, acarus folliculorum, which inhabits the hair follicles and sebaceous glands. It is characterized by slight itching, falling out of the hair with a simultaneous desquamation; or by pustule formation with subsequent thickening of the skin.

These mites live and propagate in the hair follicles and sebaceous glands, and have been found in the comedones of man, but do not seem to cause any irritation there. It differs in shape from the other mites mentioned.

Follicular mange attacks dogs of all breeds, but the short haired ones more often than the long haired varieties. This is thought to be due to the fact that the long hair wards off infection. It is very contagious, but yet is not easily transmitted by inoculation. This disease appears in two forms, the squamous and the pustular. In the former its favorite seat is around the eyes where it is shown by loss of hair, slight irritation and desquamation of the epidermis and the skin may finally assume a bluish gray color. On account of the slight reaction, diagnosis of this variety of the disease is difficult so that all cases showing baldness around the eyes, accompanied with slight irritation should be examined for the parasite.

The second or pustular variety is more common. It is shown by the formation of papules or pustules which correspond to the location of the glands. It may occur in circumscribed patches upon the head or paws, or may attack the entire body. The usual places, however, are the head, throat, neck and inner sides of the limbs. In the early part of the infection the skin is hyperemic, with some scattered nodules. These change in color to bluish red or even suppurate. The skin thickens and may be partially covered with a greenish, yellow, sticky, purulent discharge, in places mixed with blood. The hair falls out or can be easily extracted. If the skin is not injured by the animal scratching, it will dry up, but still be thickened, and has a tendency to lie in folds and show bald or partially bald spots. It is covered with bluish gray epidermal cells and scabs between the cracks or

fissures, and has a peculiar copper red color in the unpigmented parts.

The surface may be covered with lumpy hard nodular excresences from which plugs of pus may be squeezed. Itching is usually slight, but may be severe. If the animal scratches itself the above lesions are much changed.

Diagnosis:—The pustular variety may be often diagnosed by the characteristic bluish red pustules, localization of the affection upon the head, and extremities, while the squamous form can only be positively diagnosed with the microscope.

Prognosis and treatment:—The prognosis is not very favorable as treatment is difficult and may take months to effect a cure. A great many drugs have been advanced for the cure of this disease which only tends to show the difficulty in treatment. The usual remedies are the same as those mentioned under the sarcoptic variety, tar, creolin, etc., to which sulphuretted potash, tincture of iodine, aspidium and the mercurial preparations should be added.

The principles of treatment consist in first clipping the animal and squeezing or splitting the pustules, followed by the application of the parasiticides. I will not enter further into the treatment except to say that we have had good results in the localized squamous variety from the applications of tincture of iodine and in generalized cases by the use of baths and the following prescription:

Balsami Peruvianae	50
Creolini	50
Oleoresinae Aspidii	75
Alcoholis	550

The treatment must be continued until no nodules are present, and even then the danger of reappearance is great. It is needless to say that all cases of mange should be kept in quarantine.

SARCOPTIC SCABIES OF THE HORSE.*

By Colonel E. R. C. Butler, A.V.S., F.R.C.V.S.

I make no attempt to give a detailed general survey of the disease, but confine my report to some clinical points.

(1) Symptoms.

The severity of the symptoms is in inverse proportion to the general well-being of the animal.

In a well-fed, well-groomed, and well-conditioned horse they may be comparatively trivial. It may not be till the disease has existed for many months that it is thought necessary to consult the veterinary surgeon. The patient will have a slight eruption, will enjoy grooming, will lean on the brush, and will show gratification by the movements of his lips; but these may not be recognized as signs of a disease. The eruption may be lightly spoken of as "humor," the pleasure shown when brushed is considered a normal habit, and the more attention that is paid to grooming and the general toilet of the stable the more slowly will the disease spread, and the slighter will be the symptoms displayed. Some such cases appear to acquire a tolerance of the irritation and to harbor the parasite without great inconvenience to themselves, whilst they remain a potential source of infection to others.

On the other hand, when the opposite conditions prevail, when overwork and underfeeding combine to impoverish the tissues and lower the vitality of the patient, the symptoms become more pronounced; and if in addition the animal is ungroomed and the spread of the parasite completely unhampered, they are extremely severe. The irritation is very marked; the constant rubbing and biting which is practised to allay it produce excoriations and inflammation of the skin, which becomes thickened and wrinkled

* Reprinted, Tenth International Veterinary Congress, London, 1914.

on the neck and shoulders, and perhaps on the elbows, ribs and stifles; the case loses flesh and may have a fatal termination.

This last is the picture presented by the text-books; it is the picture of the disease under war conditions; but I think it necessary to draw particular attention to the very modified train of symptoms which may be found in well-cared-for animals.

(2) Diagnosis.

Diagnosis can only be established with certainty by actual demonstration of the parasite. A naked-eye diagnosis may be erroneous. Several methods for the detection of the parasite have been described; one is so much better than the others that I depend upon it solely. This is to scrape a portion of the suspected area till blood oozes; to place the material obtained in a solution of liq. potassæ until all epithelium and hair are satisfactorily broken up, to add a small quantity of glycerine, and examine with a low power. Sometimes it may be necessary to examine many specimens, but it is a simple and successful method.

I do not undervalue the naked-eye appearances as aids to diagnosis, but they are not to be depended upon alone. I have seen cases considered to be simple eczema proved to be scabies, and a case which was thought to be scabies turned out to be a form of non-parasitic eczema.

There is a possible source of error even in microscopical diagnosis. Acari, other than those of scabies, are to be found on the skin of the horse, and at least two varieties cause great irritation. Examination of sweepings from a forage barn, or the dust of old woodwork, will disclose many varieties; and the same may be found in groomings from healthy horses. It is not a matter of great difficulty to differentiate them from the sarcopt of scabies, but it is necessary to make accurate observations upon them, for they are very frequently met with. As a general rule, and apart from their special characteristics, it will be found that such accidental acari are much more transparent than the sarcopt, and the chitinous folds of the skin are more faintly marked. Dermanyssus of the fowl and pteronyssus of the sparrow or lin-

Fig 1 *

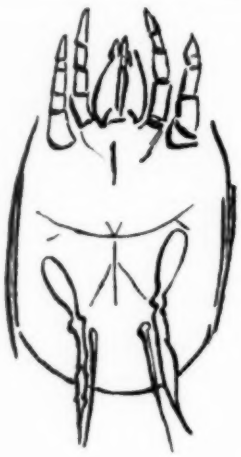

Fig 2 *

Fig. 3.†

Fig. 4.†

Fig. 5.†

*Figs. 1 and 2 seen in debris from forage barn, in dust from stable beams and in groomings from a healthy horse.

†Figs. 3, 4, 5, 6, 7, 8 and 9 were found in skin groomings from healthy horses, and Figs. 7, 8 and 9, also found in forage dust.

Fig. 6.†

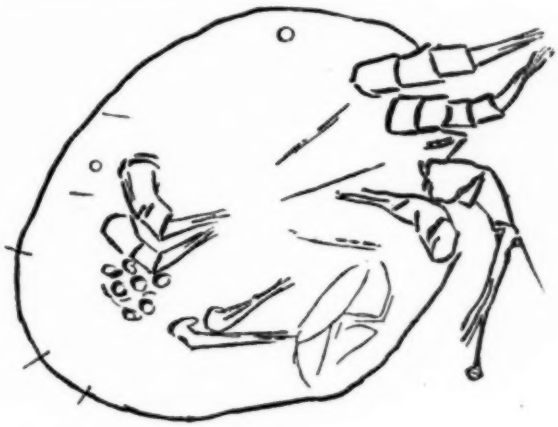

Fig. 7.†

Fig. 8.†

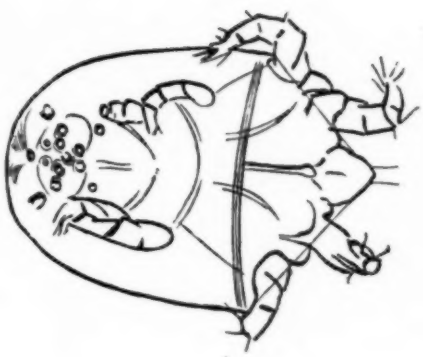

Fig. 9.†

net produce great irritation of the horse's skin. The latter of these I have met on three occasions. The shape and size of the parasite makes its differentiation easy, but as the irritation produced persists for a considerable time, and the consequent rub-

bing of the patient may cause excoriations and eczematous weeping of the skin, it is necessary to be accurate in the diagnosis of the affection.

(3) The Spread and Recurrence of the Disease.

The conditions described under "Symptoms" affect the spread of the disease in the most marked degree. In stables where horses are separated from each other it may be very slow. It even occurs that an outbreak may be confined to a solitary case, although it may have existed for a considerable time; and this is naturally more likely to happen in private stables, where each horse has its own attendant and equipment. In public stables, where the separation of individual horses is not so complete, and where constant changes of men and stable gear are more prevalent, the number of cases found affected in any given outbreak will generally be proportionately greater; and under war conditions, when animals huddle together and rub against each other, and when, moreover, infected equipment may be frequently transferred from horse to horse, spread is very rapid, and a large percentage becomes affected.

I do not propose to labor those details of transmission which are familiar to all veterinary surgeons, but I wish to invite your particular attention to what I may call "recurrences." An annoying feature of the disease is the discovery of a fresh case just as we are congratulating ourselves that the outbreak is overcome, and I have seen it happen at an interval of three months after the last case had been considered cured. These recurrences are, I think, simply due to the escape of some unusually hardy or fortunate individual or individuals which manage to carry on existence without attracting attention until conditions are favorable to them.

Certain of my colleagues hold that such recurrences are caused by fresh infection from parasites which have contrived to exist apart from a host, and some of the sarcoptidæ are certainly able to do so for long periods. Goodall records a case of dermanyssus of the fowl, which, having devoured its companions, was found

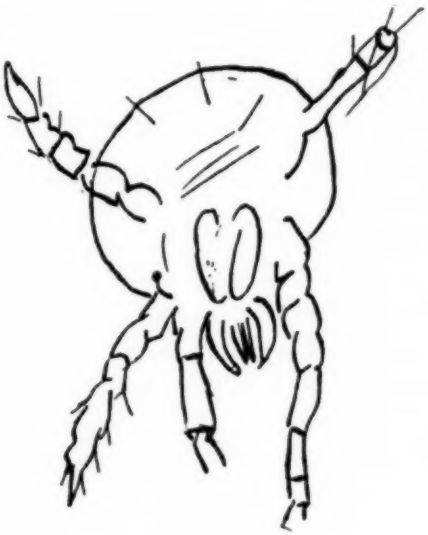

Fig. 10.‡

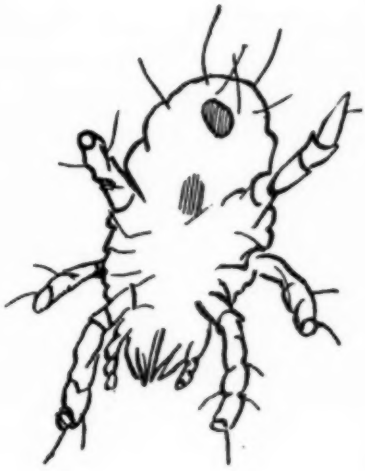

Fig 11 ‡

Fig. 12.‖

‡Figs. 10 and 11, from a sparrow's nest in the roof of a stable.
‖Fig. 12. *Pteronyssus striatus* (?) of sparrow. From a horse.
Mag. about × 200.

alive with unhatched eggs in a sealed box after many months; and Stockman has observed the psoropt of the sheep to live for six weeks apart from the animal: the longest recorded period for the sarcopt of the horse is twenty-eight days (Gerlach). I do not, however, think it necessary to argue as to the possibility of separate existence in order to account for these "recurrences" as a rule. Imagine a case infested with many thousands or millions of acari; it is quite possible that a single ovigerous female escapes destruction, or even that fertile eggs may survive, though we may have been most conscientious in our methods. It might, then, be a considerable time before any apparent symptoms were produced, and if the opinion previously expressed, that irritation may not necessarily be very marked, is correct, such a case would possibly escape detection for three months or more.

(4) Treatment.

In the choice of acaricides we have to consider their effect not only on the parasite, but on the patient. Partial or perfunctory dressings may palliate the case but will not eradicate the disease. The only safe method is to dress the animal all over, and the remedy should consequently irritate the skin as little as possible, but maintain its toxicity as long as required. Any application which causes severe irritation masks the disease and renders future observations more difficult. Watery dressings are not nearly so effective as greasy ones; greasy applications are difficult to remove, and if at all rancid blister the skin. Volatile substances do not retain their toxicity long enough to be useful. My own preference is for a mixture of sulphur, bicarbonate of potash and a bland oil. It is not ideal, but it is successful if thoroughly applied. In a few cases it causes irritation of the skin, but on the whole it does less damage than any other really effective dressing I have seen, and it can be relied upon. Previous to application the case should be clipped; the dressing should be left on for a week and gentle inunction practised daily. The patient should be well fed.

The disinfection of the stable and the animals' equipment must

be thorough to the minutest detail, and carried out at the time the dressing is applied.

In dealing with outbreaks in large bodies of horses, it is most necessary to have all details of treatment carried out systematically, so that no point shall escape thorough attention. Constant individual inspection and close clipping of the coat for a considerable period after treatment are also essential. The greatest factor in success is the personal element.

BRIDEGROOM HAS DOGCART RIDE—VETERINARY COLLEGE SENIOR WEDS OWNER OF HOSPITAL FOR PET ANIMALS—STUDENTS CELEBRATE—Six weeks ago Charles Babcock, who is in his senior year at the Chicago Veterinary College, happened to think that soon he would be out of school bucking up against the proposition of making a living for himself.

He had heard of Dr. Elinor McGrath, whose cat and dog hospital at 3247 Indiana avenue is said to be quite a prosperous institution. So he thought he would go out and see her and ask her to give him a few pointers about getting on in the world.

Yesterday Dr. McGrath and Mr. Babcock were married. A few hours after the ceremony Mr. Babcock was waylaid while in the veterinary college, which is at 2537 South State street. He was tied into a cart behind a nervous hound. Three hundred students with enough animals to stock a two-ring circus paraded up to the bride's cat and dog hospital. There are fifty-two patients in the hospital. They raised their voices and joined in the charivari.

The bride appeared, smiled at the assemblage, and at her husband, and expressed herself as delighted with the entire procedure.—*Chicago Tribune.*

UNIVERSITY DAY AT NEW YORK UNIVERSITY: October 10 was set aside by New York University for a union of all the schools of the university on the campus at University Heights. Students, professors and friends, representing each of the schools, greeted each other on the beautiful grounds with a common purpose, the promotion of good fellowship, and a better acquaintance among the several schools. The schools were generally well represented, and the day was a marked success.

THE ADVISABILITY OF A LIVESTOCK SANITARY BOARD IN NEW YORK STATE.*

W. G. Hollingworth, D.V.S., Utica, N. Y.

In this great and good country and land of the free, everyone has the blessed privilege of being allowed to express his opinion on subjects which he thinks are right or wrong, especially if he is not seeking office or working for the interest of anyone. I have no unfriendly feelings. Everything so far as I know, at least so far as I am concerned with the Department of Agriculture of this state, from the Commissioner down, is agreeable. I have the most friendly feeling for all; but, gentlemen, friendship is one thing, business is another. I have an idea which no one can prevent me from expressing, and that is, the time has come, when a change must be made in the Bureau of Veterinary Service of the Department of Agriculture of this State. I am of the opinion that the best way to rectify the present undesirable condition that exists, (as I see it), is to establish a Live Stock Sanitary Board that would look more closely after the interests of the veterinary profession and the live stock interests in this state. I believe when a man takes a stand and thinks he is right he should have the courage of his convictions and fight it out. If he can be shown he is wrong and he can see it, he should retract his views, but stick, if he is right. Our profession today is a factor, yes, a power. Our number of qualified men are increasing. The result is that we must be recognized and consulted before any acts are taken that would in any way affect its standing. Why I say this is due to the bill that was introduced at the last legislature, " to amend the Agricultural Laws in this State." I contend that the drafter or drafters of this section of the amendment should have called a conference of veterinarians to discuss it before its introduction. I, as a member of the legislative committee of this society, felt it my

* Read at the twenty-fifth annual meeting of the New York State Veterinary Medical Society, Rochester, N. Y., August, 1914.

duty to go to Albany to oppose the bill, which I did, and I used every honorable means I could to do so. The present bill from our point of view is bad enough. Why put a bill on the statute books much worse? It did not get reported.

I believe the live stock interests in this state have outgrown their present quarters. They should be under a separate head or department, and that should be under the supervision of a regular and competent veterinarian. To me it is very unpleasant to think that a veterinarian who has spent years of study and expense to meet the requirements of the laws of this state, in order to practice; who is a guardian of health to the live-stock; a public benefactor and standing as a representative of a profession which is in a position to help lessen the mortality of the human race, because of his knowledge of sanitary medicine; should have to receive orders from a layman. That is what the chief veterinarian in this state has to do. It is no fault of the commissioner's. It is the law. We may not always have a man like Commissioner Huson as the head of this department. Suppose one fills the position who may be opposed to the advancement of laws, as we know they ought to be, and so issues orders. What a serious setback the live-stock interests would get. We all know what a change in politics means. That is, has and always will be the same, if there is not a change in the way of conducting our state affairs at Albany. We must not allow politics to interfere with our live-stock interests.

Now, under the present conditions of the Bureau of Veterinary Service in this state. what have we? A chief veterinarian, and a consulting veterinarian. It is very puzzling to me, and I am told other states, which are in a position to judge do not fail to censure us for such a condition of affairs. There must be a cause. I ask, why is it necessary to have two veterinarians doing one man's work, at a large extra expense? I do not blame anyone for accepting a position, if tendered to him, to get on the pay-roll of the state. The check comes in very handy each month. All I can say is that I am very sorry for the profession, and very, very sorry for the state, and the live-stock interest that such a condi-

tion is necessary. I say necessary, because there must be a cause. The commissioner must be conversant with it. I see no reason why one veterinarian could not attend to the duties of this office. If we have arrived at the time when we have no timber, so to speak, in this state capable of heading this office without having to create an extra office, let us go outside, if necessary, and pay the salary that the combined officials are receiving.

If this were done, gentlemen, the state would produce results. No department can run smoothly with two officers with equal power. Friction will, as sure as time, develop. And as soon as that occurs it will mean a retrograde movement, both for the veterinarian and live-stock interests. The producers are going to think over this matter seriously, if they have not already. There is no reason under the sun why they should not. It means dollars and cents to them. They are the ones who help pay for this unbusiness-like plan. Just think of the amount of money interested in live-stock and pet animals; over $190,000,000, and rapidly advancing in this state, but for some reason the production is falling off. Something must be done to check it. It is a problem. I believe that the creation of a Live-Stock Sanitary Board, with a man at its head; a veterinarian, whose constant thought would be for the two interests in question, would be the way to solve this problem. He would be broad minded enough to appear before the governor or legislature, in such a forcible way, with statistics, that they could not refuse to take notice. By so doing, laws would probably go on the statute books, that would immediately bear fruit. Just think of it! New York State ranks second in milch cows. Fourteenth in other cattle. Fifteenth in number of horses. Twenty-fifth in hogs, and thirty-fourth in number of mules. Does anyone present consider this a good showing for this state, with its abundance of rich, fertile pastures and land under cultivation, from a state that is developing so much energy along the lines of agriculture? What would the agricultural interests amount to, without live-stock? They must go hand in hand. Our population is rapidly increasing. They depend on the producer to furnish them with food, and our servants at Albany owe to

them a duty to establish laws whereby such conditions can be brought about.

In closing I want to quote from Edward Everett Hale:

> " We must look up, instead of down,
> We must look forward, instead of back—
> We must look out, instead of in."

Gentlemen of the veterinary profession of the State of New York, you must lend a helping hand.

PRACTITIONERS' COURSES—During the month of August (24th-29th) the Iowa State Veterinary College, Ames, Iowa, conducted one week of a two weeks' practitioners' course. The second week of the course is to be given during January, 1915. The course proved to be very successful, for about seventy-five practitioners registered for the week. The attendance and attention were excellent. This opens a new field for the veterinary colleges and should prove of great value to the busy practitioner, who is desirous of keeping up with the latest developments in veterinary medicine. A similar school was conducted at the Veterinary Department of the University of Pennsylvania last year and was so successful that it will be repeated this year. No doubt other colleges will inaugurate similar courses in the near future.

Dr. John Adams of the Veterinary Department of the University of Pennsylvania, and Dr. O. V. Brumley, '97, of the Veterinary College of the Ohio State University, assisted the Iowa State College faculty in giving instruction for the week.—*The Veterinary Alumni Quarterly*, O. S. U.

DR. YOUNGBERG MADE CHIEF—Dr. Stanton Youngberg, who went into the service of the Department of Agriculture in the Philippines, soon after his graduation from the veterinary school of the Ohio State University in 1907, was made Chief Veterinarian on June 1, last, at a salary of $6,000 a year. The doctor entered the service as field veterinarian, and in 1909 was promoted to the position of supervising veterinarian, which capacity he filled until his promotion to chief on the resignation of Dr. A. R. Ward. The REVIEW congratulates the doctor on his rapid advance to his present excellent position.

INOCULATION AGAINST SWINE FEVER*

CONCLUSIONS OF REPORT, BY PROF. F. HUYTRA, BUDAPEST.

Swine fever may be successfuly combated by serum injections and by simultaneous inoculations.

A potent serum confers immunity against both experimental and natural infection with the filterable swine fever virus, and indirectly against secondary bacterial infections (mixed infections). Animals that are injected with serum and simultaneously or shortly afterwards exposed to natural infection acquire a permanent active immunity. Serum injection is therefore indicated in the case of recently infected premises, and if the injections are made as soon as the presence of the disease is recognized they have the effect of rapidly cutting short the outbreak.

By the simultaneous methods pigs immediately acquire an active immunity which is lifelong. On previously healthy premises the simultaneous method, as a rule, causes little or no loss, but excessively severe inoculation reactions cannot be avoided. Until the inoculation reactions are passed great care must be exercised to prevent the spread of the disease.

PROF. GILL MAKES STIRRING ADDRESS: Prof. H. D. Gill, secretary of the faculty of the New York State Veterinary College, at New York University in New York City, and veterinarian to the New York State Department of Agriculture in charge of glanders in Greater New York, although he was not listed on the programme of the Eastern Live Stock Sanitary Association, and had no paper prepared for the recent meeting in Albany, N. Y., stirred the members of the organization by a rousing extemporaneous address in connection with the discussion on tuberculosis and glanders.

THE REVIEW IS BETTER THAN EVER: Dr. E. B. Carter, of Minnesota, in renewing his subscription to the REVIEW, writes: "It is better than ever."

* Reprinted. Tenth International Veterinary Congress, London.

REPORTS OF CASES.

INTERESTING CASES IN PRACTICE.*

By E. V. Hover, D.V.M., Convoy, Ohio.

Case I. Fracture of the Left Metacarpus. Recovery. Subject was a yearling gelding of driving type.

Fracture caused by kick on inner and superior surface of the metacarpus, causing an oblique fracture extending downward and outward to two inches of the distal end of the metacarpus. The bones protruded from the wound at seat of injury, forming a compound, comminuted fracture.

Treatment. Colt was on a bed of hay. Limb disinfected with alcohol; wound dressed with tincture of iodine. A roller bandage was placed on over cotton, this lightly holding the bones in apposition until a plaster bandage was applied firmly over it. A window was made in permanent bandage for drainage of the wound. Colt was allowed to rise and put in slings for two days, then was lowered to a bed of straw. Result—recovery in six weeks.

Case II. Traumatism and Protruding Intestine. Recovery. Subject was a two-year-old Belgian mare. While eating grass around barn-lot her halter became caught in an old harrow, which frightened the animal, causing it to swing the harrow against the abdomen, producing a wound four inches long and into the peritoneal cavity. Examination revealed a loop of intestine two inches long protruding from the wound. Prognosis very unfavorable.

Treatment. Subject was given chloroform in standing position to complete anæsthesia. When patient was down the limbs were secured in casting harness. Wound was cleaned with a 1 : 1000 bichloride solution and tincture of iodine. Reduction was possible only after repeated trials; the serous coat of bowel was perforated also, making manipulations more dangerous. After reduction was complete, each layer of muscles was sutured separate. The skin was stitched with interrupted suture, using linen thread. The edema following for ten days was very great.

* Reprinted from *The Veterinary Alumni Quarterly*, College of Veterinary Medicine, O. S. U.

Treatment of wound. The first ten days a 1 : 1000 bichloride solution was used twice daily. Afterward irrigations of the normal saline solution were made twice a day. Internal treatment consisted of three-dram doses of calcium sulphide three times daily. Patient retained a good appetite, and a complete recovery followed.

Case III. Subject—pig. Called to a farm near town to see a pig which owner said was acting queerly. Examination revealed a case of tetanus. The pig had been castrated three weeks previous, and wound was apparently healed. Result—death. This is the only case of tetanus the writer has ever seen in a pig.

Case IV. Removal, Recovery. Subject—a four-year-old mare, partially broken for use, was brought in for examination as to cause of pus discharging from outer border of ear, above annular cartilage. At base of ear there was an enlargement about the size of a hulled walnut, hard and slightly movable. As the animal was quite refractory we decided to wait a few days until weather was more favorable for operation in open. This was done. An incision was made for the enlargement and an elliptical piece of skin removed. Then we discovered a hard fibrous capsule surrounding a hard body. This was dissected down to the bone and the hard object taken off with bone forceps. Care was taken to remove all the capsule and pieces of bone. The sinus in the ear was opened and dressed with boric acid and iodoform. The cyst proved to contain a well-developed but rudimentary molar tooth. Result—complete recovery.

Cases V. (a) Laryngo-pharyngitis. Lloyd's subcutaneous lobelia used. Subject—Belgian mare with strangles. She was treated by another veterinarian for two weeks, but a swelling which existed in the throat region was not reduced. Blisters and poultices had been used. While at the farm treating another patient for owner he called my attention to subject, and asked my advice, saying: "Everything the mare tries to eat or drink comes out through her nose." I told him that she could swallow by morning, so gave at once 20 c.c. Lloyd's lobelia subcutaneously. Result—animal ate and drank nicely in the morning, and made a complete recovery in a few days.

(b) Large Sorrel Mare—Roarer. Develops laryngitis. Breathing very difficult. We were to perform tracheaotomy, but thought we would try a large hypodermic dose of Lloyd's lobelia. Accordingly, this was given. Results were phenomenal, the patient making a good recovery other than the chronic roaring symptoms. The writer has used lobelia hypodermically exten-

sively for four years and finds in all laryngo-pharyngeal affections, whether primary or secondary, it is beneficial. Also very useful in tetanus.

Case VI. Empyema of Frontal and Maxillary Sinuses. Subject—six months old filly. Had been treated for two months by an empiric for nasal catarrh. When our attention was called to it the respirations were so labored that asphyxia was threatening. Examination revealed enlargement over left maxillary sinus most prominent at lower end of the zygomatic ridge.

Treatment. The frontal and maxillary sinuses were opened, allowing a great quantity of pus to escape. The septum was broken down and an opening made into the nasal passage for drainage.

Result—colt made complete recovery in eight weeks without complications. This is interesting to us only because of age of subject. We found that our landmarks for this operation were at variance to those given in Professor Williams' text on surgical and obstetrical operations. In older subjects we found them fairly constant. In this subject an imaginary line drawn from the inner canthus of the eye to the opposite eye was the superior or highest point at which the cavity could be opened.

Cases VII. (a) Paralysis of Supra-scapular Nerve.

Recovery. We have had three cases of this form of lameness; all were in young working animals. It would take too much space to follow each case to its end, so we will append our treatment, which was as follows: Absolute rest enforced by deep injections of a sterile solution of turpentine and chloroform, the former seven drams and one dram of the latter.

℞	Oleum terebinthinae	28:00
	Chloroformi	4:00

M. D. S. Inject 4:00 deeply in the muscles and repeat when swelling subsides.

In one case, which was so badly afflicted that the animal could not walk, we made fifty-six injections deep into muscles, without any abscess formations. At each treatment we would make six injections, using a dram at all six punctures. These animals all recovered.

(b) Radial Paralysis. Subject—large four-year-old gelding.

While running he fell over a wire fence. In a few days owner noticed horse dragging the limb. Owner called our attention to it, saying the horse had a broken shoulder. Indeed there was no muscle relaxation, and the gliding of the tendons over bony

prominences simulated crepitation very strongly. We diagnosed the case as radial paralysis and advised the owner to let him alone as far as external treatment was concerned. Internally we gave liquor potassi arsenitis for a time, but the owner soon got tired of treating him and eventually let him alone. Result—recovery in eight months.

Case VIII. Azoturia. Result—recovery.

Patient was a twelve-year-old driving horse. Had not been out of barn for days. Was found down in stall. Examination revealed a hardened condition of gluteal muscles. Black or high colored urine; in fact, all the usual symptoms of azotura were present. Gave general treatment for azoturia and patient was able to stand after being down four days.

Cases IX. Obstetrical Case. Result—death.

(a) Cow, fifth calf. Had gone three months over normal gestation period. When found by the owner the cow was in labor and unable to deliver. We were called in to assist and on examination found a posterior presentation with hocks extended. The feet were drawn out through the vagina and traction put on them. After pulling more than we should have on any case of this kind we decided to cut the body of fetus in two as the head and shoulders would not come through the passage. We turned the neck, head and one limb around, but one limb we could not turn. As the cow was in a poor condition, we destroyed her and found the opposing limb had neither carpus nor humero-radial joint.

(b) Obstetrical Case. Death.

Small Jersey cow in thirteenth-month pregnancy. The body circumference at lumbar region was nine feet and eight inches. Diagnosis, hydropsamnion.

Treatment. A sterile horse trocar was inserted into the uterus in the lower right flank. Through this we drew off thirty-nine gallons of fluid. Cow began showing systemic symptoms, *i. e.*, short breathing, fast pulse and swaying, so trocar was removed.

Two days later another puncture was made and twelve gallons more were drawn or, making in all forty-nine gallons. The subject by this time looked much less than a cow. The neck of the uterus was dilated, and two days later the cow gave birth to a living calf which had a length of twenty-four inches from tip of nose to tail and was sixteen inches high. The cow was so weak and anaemic that we killed her two weeks later. The calf lived and did well.

METROPERITONITIS, CYSTITIS AND STONE IN THE BLADDER.

By CRITTENDEN ROSS, D.V.M., New York, N. Y.

The following interesting case recently occurred in the practice of Dr. Robert W. Ellis, and in the doctor's absence from the office, it fell to me to diagnose the case and treat the patient. The history of the case was as follows: During the past two years the patient had been noticed to urinate quite frequently during her daily exercise, and for two weeks prior to the time she was brought in for treatment (which, by the way, was six hours before she died), it had been noticed that a small quantity of blood was passed with the urine. She was not able to stand when brought to the office and the owner stated that she had not voided urine for two days. Because of the very low condition of the animal, then showing a rise of temperature to 104.8° F., an unfavorable prognosis was given. A linen catheter was passed, according to the method described by Dr. Heinrich Jacob (translated by Julius A. Jessen, D.V.M., of Irwin, Iowa), published in the AMERICAN VETERINARY REVIEW, April, 1913, page 80. There was no difficulty experienced in passing the catheter and no sensation to indicate the presence of a stone, a fact that may have been due to the pliability of the catheter. Two ounces of thick, mucilaginous urine, having a very penetrating odor, was obtained by catheterization. The bladder was then irrigated by means of the catheter with a permanganate solution, 1 to 10,000, and the patient placed on diuretic treatment, and, as the bowels had not moved for two days, a dose of rhamnus purshiana was administered. The dog retained the medicine only until it reached home, when it vomited it up, and in six hours from the time it had been presented to the office for treatment, it was dead.

Post mortem.—The bladder, with greatly hypertrophied walls, was completely filled with stones, varying in size from that of a pin's head to a good-sized marble; there being nine of the large stones, and hundreds of the small ones. I had counted seventy-five small stones, which appeared to be less than one-tenth of the mass, when Dr. Ellis requested me to desist, as he desired to have the specimen preserved just as it was, with the stones in their original position. The large stones remain just as they were found and can easily be counted in their places by parting the lips of the incision in the bladder; the small

ones counted were those that escaped when the incision was made. Bladder and stones weighed 54.3 grams after pickling 48 hours in formaldehyde solution.

The left cornua of the uterus presented three large distended portions which were distinctly separated by portions of contracted horn. These contained a very thick, mucilaginous, putrid material; and at the bifurcation of the uterus were numerous nodular growths.

STRYCHNINE POISONING IN ST. BERNARD DOG.

By CRITTENDEN ROSS, D.V.M., New York, N. Y.

Was called during the night to see a dog, the owner stating that it had had two fits. Upon my arrival, and stepping in the room beside the dog, it immediately went into convulsions. Attempting anaesthesia and administering H. M. C. for the later and more lasting action, the patient became quiet and remained so for about thirty minutes; when his master moved and the convulsions again occurred. The animal was then given chloral per rectum which quieted him for only a few minutes; then, strychnine being suspected, attempts were made to evacuate the stomach without success. Here, by a few questions, it was learned that about two and one-half hours previous the dog had been taken out for a walk and had left his master and was gone for some time and finally found waiting in front of the door. The owner was warned of the danger of a fatal termination, as the patient continued with the convulsions and ceased breathing after one of them. But since he was valued very highly, as a pet, by the entire family, artificial respirations were resorted to, and the patient resumed breathing again, only to suffer the agony of a few more convulsions, when he finally passed away.

The fact that several cats had died in the neighborhood about that time, suggests that poisoned food had been put out for them by some despicable person.

Post mortem: The stomach contained bones, a small quantity of sweetcorn, meat, and a large-sized piece of newspaper. The blood was a dark red color; all the blood vessels were congested; the kidneys were hemorrhagic and when cut the dark blood oozed out over the entire surface.

(Note—The post mortem was not held for a few hours after death.)

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

TOXIC RESULTS FROM THE MINIMUM MEDICINAL DOSE [*Gov. Veterinary Surgeon, F. J. Dunning*].—*Case No.* 1.—Horse had acute laminitis—refused to take draught, fought and became dangerous. One grain tabloid of eserine sulph. is dissolved in 10 c.c. of water—5 c.c. are injected intra-jugularly. As the author turns round to fill the syringe and give the other 5 c.c. the horse had his eyes rolled up back, his neck was arched and the animal dropped down to the ground as if shot. After a few seconds he got up, staggering. After twenty minutes the danger was over. During that time he trembled violently, sweated profusely, the breathing was accelerated, there was gasping, sobbing breath, pulse about doubled. Little peristaltis could be heard, but no evacuations took place.

What would have happened if he had received the second dose?

Case No. 2.—Cow had calomel and salts without results. Ausculation showed very little peristaltic action. One grain tabloid of eserine sulphas, strychnia sulphas and pilocarpine was dissolved and given hypodermically. In about five minutes the cow was in convulsions and soon expired.

It is the first time that the writer combined the three agents, it will be the last!

Question of the writer—What did the cow die from, the eserine, the strychnine or the combination?—(*Veter. Record.*)

ROARING BY PARALYSIS OF THE RIGHT VOCAL CORD [*Prof. F. Hobday*]—One very rare case indeed. Out of 950 roarers operated by the author, it is the only one where the right vocal cord has been found paralyzed.

The patient was a hunter, 12-years-old, which was bought as a roarer with the object of being operated. The operation was performed in the usual way and it was then that the condition of the cord was observed and seen by onlookers and veterinarians present. The operation was completed and the result will be published later on.—(*Veter. Journ.*)

FLANK METHOD IN MONORCHID CASTRATION [*W. Carroll Patrick, F.R.C.V.S.*].—Having had some disappointments in previous cases by the inguinal operation, the author decided to resort to the flank method. Horse was prepared, physiced, cast, chloroformed, usual antiseptic care taken; incision of the abdominal walls made, the tunica abdominalis incised, large enough to introduce the hand, the testicle was secured, the cord divided with the ecraseur, the organ removed and the abdominal wound closed with four stitches to the external oblique, five to the skin. The horse never missed his food.—(*Ibidem.*)

ABDOMINAL TUMOUR [*Guy Sutton, F.R.C.V.S.*].—A mare which had done some steady work for five years, was noticed one morning drinking a great deal and urinated profusely. She also began to loose flesh. No other trouble being present. After a week she quit her food, appeared hungry, took hold of her hay, but instead of swallowing she let it drop in the manger after chewing it a little. Her teeth were sharp and attended to. She kept in same condition. No diagnosis could be arrived at. After three weeks death took place. Post mortem revealed a large tumour, weighing 60 pounds, situated between the stomach, the liver and the spleen. It was a spindle-celled sarcoma.—(*Ibidem.*)

LUXATION OF THE OPTIC LENS [*Capt. T. Lishman, A.V.C.*].—Full grown lion performing in a circus had his sight so bad that it became unable to go through its performance. He was reported by the owner as having a white body inside the right eye, which caused so much irritation that the lids were kept partially closed and there was an almost continuous flow of tears. The examination, done under great difficulty, and not without danger, revealed that the white body was a cataractous lens in the anterior chamber of the eye, which had become fixed to the posterior surface of the cornea through the keratitis it had occasioned. Both pupils were much dilated. While the animal was being examined, he gave a sneeze and the lens of the left eye jumped from the posterior to the anterior chamber. The owner declined to have an operation performed.—(*Veter. News*).

PASTEURELLA ISOLATED FROM POLL EVIL [*Wm. Scott, F.R.C.V.S.*].—Aged cart gelding had been operated for poll evil and received three injections of autogenous vaccine, composed of staphylococci (aureus and albus).

At some date between the 2d and 3d injection a swelling occurred between the ears, which gradually increased in size and soon was as big as an orange. The apex of this became fluctuating, was lanced and gave escape to thin, grey, non adhesive pus, slightly bloody. From this pus, cultures were made. On agar, small, white colonies developed. On gelatine, they were more aparent the medium not being liquified. In broth, a granular sediment developed. On potato no growth took place. Milk was not coagulated. A slide was stained, and the fluid showed a gram negative bacillus, short, with rounded ends and bipolar staining. The organism was not motile.

Has bipolar staining bacillus in region of the poll ever been observed before?—(*Veter. Record.*)

FRENCH REVIEW.

By Prof. A. Liautard, M.D., V.M.

A Rare Case: Total Coecal Invagination in Large Colon [*Mr. Nieder, V.S.*].—Fine Percheron mare, eight years old, doing very hard work (is, however, in good condition), aborts an eight months' fœtus, and forty-eight hours after has dull, intermittent colic, which does not pass entirely by simple treatment. As she has some constipation, castor oil is administered, with good results, and the colic subsides. There remains, however, a diarrhea of bad odor, which resists to opiate and intestinal antiseptics. Still the mare has fair appetite; the digestion seems difficult, as she has dull abdominal pains which pass off when digestion is completed. Soon the animal loses flesh, and the condition becomes alarming. After some hesitation the owner has her destroyed, after an illness of over a month. At the post mortem there was found a complete invagination of the cœcum in the first portion of the large colon, which by its appearance and the lesions that it offered showed that it must have had its origin at the beginning of the trouble and had been the cause of the long series of manifestations.—(*Bulletin de la Soc. Cent.*)

Mare Pseudo-Hermaphrodism in Horses [*Mr. Pezet*].—A nine-year-old horse can, at superficial examination, be taken for a mare; he has mammae, and by raising his tail there is exposed a vulva, widely open by a clitoris largely developed. Yet the subject is only a stallion with congenital malformations. Back of the teats, there are two atrophied testicles, with their cord

running in the inguinal canal. If that which resembles the clitoris is pulled outwards it stretches so as to become about the size of a normal penis. The numerous folds that cover it, form the appearance of the vulvar lips, when the organ is not drawn. The extremity of the penis is smaller than ordinarily, and less in shape of the top of a flower watering pot. The horse is seldom in erection; when he is the penis is nearly as big and long as that of a middle-sized horse. It projects horizontally backwards and is slightly curved upwards. Near mares the horse remains generally quiet. He is always doing his work quietly and shows a kind and good disposition.—(*Ibidem.*)

FIBRO-MYXOMA OF TURBINATED BONES IN HORSES—OPERATION—RECOVERY [*Adjunct Prof. Lebasque*].—Gelding has been bought cheap because of a bilateral discharge from the nose and because he roars loudly even at rest. The discharge is mucopurulent, looks like that of a chronic coryza, is not bloody and adheres some to the wings of the nose. Submaxillary and glossal lymph glands are swollen. In the right nasal cavity there is an ovoid mass closing it completely and pushing the septum nasi to the left. It can be pushed up in the cavity with the fingers, but returns to the anterior entrance of the nose as soon as pressure is stopped. All the great functions are normal. Malleine test is negative. The diagnosis is certain; it is a benignant tumor of the nasal cavities, and an operation is indicated. After preparation and a temporary tracheotomy, because the horse roars so and is threatened with suffocation, the trephining of the nasal bone, operation of Sind, is performed; opening the nasal canal from downwards upwards, instead of from up downwards as in the classical operation. The peduncle of the tumor was exposed, excised, and the growth squeezed and pulled out by the right nostril. Hemorrhage was stopped by plugging with gauze and the cutaneous wound suture. Opening for drainage was left. Recovery was uneventful. The recovery was complete; no more discharge; no more roaring.

The tumor measured 20 to 22 centimeters in length, 8 to 10 in width, 5 to 6 in thickness. It was divided in lobes by deep fissures and was cartilaginous at its inferior extremity. It was a fibro-myxoma with cartilaginous transformation.—(*Ibidem.*)

SERO-DIAGNOSIS OF PREGNANCY IN MARES is the title of Technical Bulletin No. 5, Miss. Agr. Exp. Sta., by Chas F. Briscoe, Ph.D., and E. M. Ranek, V.M.D. The subject is extremely interesting and the bulletin very instructive

CORRESPONDENCE.

A DAY IN FRANCE.

CHICAGO, ILL., October 1, 1914.

To the Editor of the AMERICAN VETERINARY REVIEW:

To many of the readers of the REVIEW who have had the pleasure of meeting and knowing Dr. Liautard, a brief account of a recent visit to his charming home in sunny France may have more than a passing interest.

It was a delightful morning the latter part of July when Dr. Ackerman and I left Paris for Vernon, a typically French village, some forty or fifty miles north of Paris. France was new and, of course, very interesting to us. We had spent a few days

Summer Home of Professor Liautard.

sightseeing in Paris, but the country we had seen very little of. We fairly hung out of the windows of the train and "rubbered" and compared the crops and methods with those of America.

As the train pulled into Vernon the conductor by vigorous gestures indicated that this was our destination. It's easy to understand French when they combine the vocal sounds with gestures that indicate that you are to get out.

Here at the station was the doctor looking as young and

vigorous as when I first knew him twenty or more years ago. The same genial welcome; the same merry twinkle of the eye; the same hopeful boyish outlook upon life; the same charming simplicity of manner. One only hopes that they may possess all these qualities when they have reached the four-score years.

Entering the limousine we were whirled away some three miles over beautiful macadam roads to the chateau, or country place at the Bois-Jerome, which we approached by a winding private road through the forest, the Bois-Jerome being a private game preserve and country residence. The accompanying cut does not do justice to the beauty of the place. We walked down one of the forest paths past the pheasantry, where hundreds of young pheasants were being raised and allowed to run wild; by the fishpond where the doctor fishes and when the fish won't bite where he says he "cusses" some. You who know him will understand that—and all the time we talked, or rather we listened, as the doctor told us of his work at the American Veterinary College in New York and on the AMERICAN VETERINARY REVIEW. With moistening eyes he showed the gold medal watch fob struck in his "image and likeness" for the semi-centennial celebration of the A. V. M. A. in New York last year. Events such as these crown the life-work of but few. We only know that in this case they were deserving monuments to an active, well-spent life.

Mrs. Boyer, the doctor's charming daughter, joined us in the forest and reminded us that lunch was ready. It seemed almost irreverent to break into such a delightful time with such a common-place event as eating, but the skilled chef had prepared a luncheon that even now haunts my memory; and so the few short hours passed, broken only by the doctor's slipping away at frequent intervals to the bedside of his life's companion, who was waiting, waiting, for the grim messenger.

Back to the village of Vernon we went through shady forest roads and across the sun-lit valley and past cliffs with great caves where large quantities of mushrooms are raised for the markets.

We said good-bye at the station. It may be long before we meet again, but we shall greet him frequently through the pages of the REVIEW.

So we passed one of the most delightful days of our trip.

How eagerly since then have we watched the papers, fearful lest War had laid his ruthless hand upon the beautiful country home not only of *our* friend, but the friend of every American veterinarian, and one who has done so much for our profession.

N. S. MAYO.

NEW ORLEANS ROUTE FROM CHICAGO.

CHICAGO, ILL., October 13, 1914.

Editor AMERICAN VETERINARY REVIEW, *New York:*

I have had numerous interviews recently with representatives of the various railroads running directly and indirectly from Chicago to New Orleans. These representatives (and they are good fellows too) ably presented the merits of their respective roads. After careful consideration I have selected the Illinois Central as being the most direct and quickest route from Chicago to New Orleans. The "Panama Limited" leaves Chicago at 6.35 p. m. and reaches New Orleans at 8.55 the next night. Those who prefer to leave Chicago in the morning can do so on the "New Orleans Special," leaving Chicago at 9.10 a. m. and arriving at New Orleans at 10.45 the next morning. Tickets can be arranged to go or come by way of Vicksburg, thus affording an opportunity to visit the National Park there. Both of these through trains are electric-lighted and carry dining and observation cars. Most of the veterinarians will leave Chicago on the Panama Limited, leaving Chicago Saturday night, December 26, at 6.10 p. m. All those wishing to go by this train should notify R. J. Carmichael. div. passenger agent, Chicago, who will arrange reservations. Special Pullman cars will be supplied if there are enough applications.

Those who wish to go by way of Nashville, Tenn., Birmingham and Mobile, Ala., can take the Chicago and Eastern Illinois and Louisville and Nashville railways and can leave Chicago at 12.35 noon and reaching New Orleans at 8.55 p. m. the next night.

Those who wish to go by way of Chattanooga, Tenn., and visit Chickamauga Park can leave Chicago over the "Monon" at 9.10 a. m. and reach New Orleans the second morning over the Queen and Crescent at 9.10 a. m.

The winter tourist rates from Chicago to New Orleans and return, good until June 1, is $37.40. I have applied to the Southeastern Passenger Association for a special reduced rate for our meeting, but there has not been time to determine whether we can get it or not. The winter tourist rate is good over all roads.

The transcontinental passenger association do not give special rates for our meeting. The regular nine months tourist fares are in effect from California and north Pacific coast points. The

rate from California to New Orleans being $104 for the round trip.

The Pullman fare from Chicago to New Orleans is $5.50 for a lower berth and $4.40 for an upper.

Be sure and write to the passenger agent of the railroad you want to travel over or to me, stating just what train you want to take, and arrangements will be made.

N. S. MAYO, Secretary.

No. 4753 Ravenswood avenue, Chicago, Ill.

THE NEW ORLEANS MEETING.

CHICAGO, Oct. 16, 1914.

To the Editors AMERICAN VETERINARY REVIEW, *New York:*

The New Orleans meeting of the A. V. M. A. is less than two months away and every member should plan now to attend this meeting which will be an unusually important one.

There is the important subject of reorganization and a revision of the constitution and by-laws. The question of changing the present plan of reports of the annual meeting and other equally important questions need careful consideration.

In sending out bills for membership dues for the coming year a letter was sent to every member calling attention to the important subjects that needed consideration and I wish to emphasize it again here.

The programs for the two sections are nearly completed. If any veterinarian has any important subject that he would like to present to the section on *Veterinary Practice* or *Sanitary Science and Police,* I will ask them to notify me at once.

The veterinarians are arranging for a splendid meeting and it is the duty of every member to make a special effort to attend this meeting in New Orleans. If you have never visited New Orleans, it will be one of the most enjoyable trips imaginable; if you have been there I know you will not be able to stay away. The only thing I fear is that those who attend this meeting will want it held in New Orleans every year.

N. S. MAYO.

ILLMO VETERINARY MEDICAL ASSOCIATION.

COLLINSVILLE, ILL., October 20, 1914.

Mr. Editor.—The next meeting of the Illmo Veterinary Medical Association will be held at the National Stock Yards Hotel, National Stock Yards, E. St. Louis, Ill., on the 20th of November, 1914.

Election of officers, a visit through the various abbatoirs conducted by Dr. E. L. Bertram, Inspector in charge, also a visit through hog cholera serum plants, general discussions, a query box, and plenty to eat are among the leading parts of the program.

Remember, November 20, 1914, E. St. Louis.

Yours mutually,

DR. L. B. MICHAEL,
Secretary.

LETTER FROM DR. HOSKINS.

CHICAGO, October 3, 1914.

Editor AMERICAN VETERINARY REVIEW, *New York.*

The following letter from Chairman Hoskins, Legislative Committee of the A. V. M. A. is self explanatory:

" DR. D. ARTHUR HUGHES, 4193 South Halsted Street, Chicago, Ill.

DEAR DR. HUGHES—I have just telegraphed you for such circulars as you have and can spare. One of our colleagues who has business relations with many influential people over the United States has started a movement among them in behalf of our bill. Of course every new centre of activity has its value now in keeping it before the senators from new sources.

I was in Washington on Wednesday last and after conferring with Senators Kern, Lea and Chamberlain, the latter advised our seeking an interview with Senator Hitchcock, which Dr. Turner and I proceeded to do. We were given a very cordial hearing by Senator Hitchcock and later a like hearing by Senator Thomas. They both admitted the error of their information as to pensions and retirement and gave evidence that they would not seriously oppose the bill and *subrosa* both expressed the opinion that it would pass in the face of any opposition they might exert

against the bill, as it was an administration or rather Department measure. So I felt that we had put in a good day's service.

Every piece of literature, numbering over 30,000, has gone to individuals, not in packages but in separate pieces; thousands of letters in addition have gone out, not to speak of the thousands of bulletin letters.

Our efforts from now on must be to gain consideration for our bill. There are forty to fifty bills on the calendar to be considered and we must have ours among the number.

I shall go to Washington and remain there the last three days of the session, when the time is fixed for adjournment, probably October 15, 1914.

Yours very truly,
(Signed) W. HORACE HOSKINS."

D. ARTHUR HUGHES.

DR. KAUPP RESIGNS COMMISSIONERSHIP TO ACCEPT CHAIR OF PATHOLOGY AT THE NORTH CAROLINA AGRICULTURAL AND MECHANICAL COLLEGE—Dr. B. F. Kaupp, Commissioner of Public Health, Spartanburg, S. C., has resigned that position to become pathologist at the Agricultural and Mechanical College of North Carolina, where he will also be in charge of the research department and will have special charge of investigations in the poultry department at the government experiment station. Although the resignation takes effect November 10, Dr. Kaupp's successor had not been appointed at the time of his letter to the REVIEW, October 14. The doctor was a great success as a health commissioner and Spartanburg regrets to part with him, but the new position gives him greater scope for his talents as a pathologist, and to follow out his work in connection with poultry diseases.

PASTEURIZATION OF SKIMMED MILK is the title of circular No. 31, published by the State Live Stock Sanitary Board of Pennsylvania, by C. J. Marshall, State Veterinarian, and Dr. W. H. Ridge, an agent of the Board, which is very interesting and instructive. This was accompanied by circular No. 28, which includes a sketch of a simple and inexpensive pasteurizing device for use in a creamery. Further information on this device can be obtained by communicating with Dr. C. J. Marshall, secretary of the Board, Harrisburg, Pa.

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VETERINARY STATE BOARD QUESTIONS AND ANSWERS.

VETERINARY STATE BOARD QUESTIONS AND ANSWERS, by V. G. Kimball, D.V.M., Assistant Professor of Veterinary Medicine, University of Pennsylvania. Nearly 400 pages. Philadelphia and London: J. B. Lippincott Company, 1914.

Appreciating the advantages of self-quizzing to the student who desires to fix firmly in his mind the subjects to which he is applying himself, the author has compiled this estimable work, covering every phase of veterinary medicine and surgery. He has accomplished more than the mere production of a book of questions and answers on veterinary science; he has placed at the disposal of the graduate veterinarian desirous of taking a State Board examination, a list of questions and answers that have actually been given by State Boards in ten or more different commonwealths, eastern, middle and western. So that, while these questions are not likely to be repeated, they represent the class of questions that are asked by State Boards generally. Many young graduates fail in State Board examinations that have passed very creditable examinations by the several members of their college faculty. Why? Because the questions mystify them—they do not understand what the question conveys—what the querist wants to know? We have said it is not likely that any of these questions will be asked again, and yet, upon reflection, when we consider that Prof. Kimball was obliged to eliminate from his collection hundreds of duplicates, it is altogether likely that many questions, very similar to those compiled in his work, or at least along the same line of thought, will be asked by other State Boards, or unconsciously repeated by the Boards that have already asked them. At all events, they are all useful practical questions and students attending colleges and graduates intending to take State Board examinations would do well to study them. As a matter of fact, a little self-quizzing in this book will do us all good—and the longer we have been in practice the more essential it is to us, and the more interesting it is to us. And while we may not agree with *all* the answers, we will learn

something from them all. It is especially valuable to the practitioner who anticipates taking a civil service examination, as it will sharpen him up on many points upon which he has become dull. Being carefully indexed, the busy practitioner can turn to any subject he desires to consult, and there is the question he is pondering in his mind, and there also is the answer to it. The book also contains six pages of prescriptions, with an average of four on a page. Some examples of the prescriptions taken at random will give some idea of the value of that part of the work.

Question. Write a prescription for a purgative.

Answer. For Mr. Brown's bay horse. Jan. 2, 1914.

℞

Aloes Barbadensis ..... ʒx
Hydrargyrichloridi mitis ..... gr. xxx
Pulveris zingiberis ..... ʒiss
Theriacæ ..... qs.

M. et fiant bolus No. 1.

Sig.—For doctor's use.

John Doe, D.V.M.

Question. Write a prescription for round worms in the dog. Give full directions.

Answer. For Miss Smith's dog. Jan. 2, 1914.

℞

Santonini }
Hydrargyrichloridi mitis } ..... āā grs. iv
Sodium bicarbonatis ..... ʒi

M. et div. pulv. No. viii.

Sig.—Fast dog 24 hours, then give one powder every hour until all are given.

John Doe, D.V.M.

And so we might go on. One calls for a prescription for a two-weeks-old calf suffering from diarrhea; another for a horse whose temperature is 105, respiration 30 and pulse 75 but strong, the medicine to be given in liquid. Another for mange in a dog, and still another for a purgative for a 900-pound cow. Those are enough to show the diversified field that the author has been careful to cover. In short, *Kimball's Veterinary State Board Questions and Answers* is indispensable to the student and young graduate facing a State Board or civil service examination, and invaluable to the practitioner as a refresher and ready reference book.

The book is printed in good, sharp type on good paper and bound in the typical Lippincott binding of dark red with gold lettering.

TEXT-BOOK OF GENERAL THERAPEUTICS.

TEXT-BOOK OF GENERAL THERAPEUTICS FOR VETERINARIANS, by Eugen Fröhner, Privy Councillor and Professor of Special Pathology and Therapeutics in the Veterinary College at Berlin. Authorized Translation from the Fourth Revised German Edition, by Louis A. Klein, Professor of Pharmacology and Veterinary Hygiene in the School of Veterinary Medicine at the University of Pennsylvania, and Dean of the Faculty. 300 pages. Philadelphia and London: J. B. Lippincott Company.

This fourth edition of Fröhner's Text-Book of General Therapeutics is strictly up to date; having kept pace with the advanced knowledge of veterinary medicine, gained since the publication of the last edition. This not only applies to therapeutics, but also prophylaxy in the form of protective vaccine, in which many changes of view have occurred in the past ten years. Following the *Introduction,* is *The History of Therapeutics,* which includes the theories of Hippocrates, Galen, Paracelsus, Boerhaave, Brown, Rademacher, The Homœopathy of Hahnemann, The Cellular Pathology of Virchow, The Serum Therapy of von Behring and The Chemico-Therapy of Ehrlich. These are most interesting and instructive chapters, extending back into the remotest antiquity, and the matter contained in them full of wonder and enlightenment for the student, and furnishing convenient statistical references for the practitioner.

The first subject treated in the book proper is *General Therapeutics of the Diseases of the Organs of Digestion,* dealing first with the stomach, its pathology, physiology and mechanism, first of the single stomach and then of the stomach of ruminants. So that the student may study the stomach of all the domestic animals under one short chapter, and the practitioner can refresh himself on any stomach with which he may be dealing, with like convenience. After mechanism comes the chemistry of gastric digestion, therapeutic methods, dietetic treatment, and finally, medicines, stomach remedies, etc., etc., fully describing each remedial agent, its indications, dosage, etc. *General Therapeutics of the Diseases of the Intestines* is treated in the same way. And so with all the different organs and parts of the body, the glands, the eye, the skin and mucous membranes, etc., etc., each apparatus is taken up in turn, and after a survey of the physiology and a review of the pathological changes to which it is liable, the therapeutic methods which may be used to correct these changes are presented, including a list of the drugs indicated. This novel method of discussing therapeutics, entirely different from that in other works, will, we feel sure, be very much appreciated, as it simplifies matters very materially.

Considerable space is given to *Disinfectants* and *Antiseptics* and to *Vaccination, Immunization* and *Inoculation.* And the final chapters deal with *Water as a Remedy—Hydrotherapy, Massage, Electricity as a Remedy—Electrotherapy, Bleeding, Indifferent Remedies—Mechanicals* and *Air as a Remedy.*

The value of this work to the veterinary practitioner was so fully appreciated by Prof. Klein that he determined to translate it into the English, that American and all English-speaking veterinarians might be able to avail themselves of it. Its excellence as a text-book is further attested by the fact that it ran into its fourth edition in the original language in which it was published.

Bound in cloth in a deep rich shade of red with gold lettering, it makes a handsome addition to the veterinarian's library.

THE FIRST ANNUAL RECEPTION AND BALL given by Chicago Branch No. 1, National Association Bureau of Animal Industry Employees, was held in the ball room and parlors of the new Stock Yard Inn, which is the prettiest, if not the largest, ball room in Chicago. Even though the weather was unfavorable, the function was well attended, 125 to 150 couples being present. It was an occasion of mirth and merriment throughout, all present being pleased with the program and were reluctant to leave when the last number was played. Among those in attendance, in addition to Bureau of Animal Industry employees of all classes, were several members of the Chicago City Council, Live Stock Commission men, employees from all departments of the various packing industries and many other prominent Chicago business men. It had been arranged to have Dr. and Mrs. W. N. Neil lead the B. A. I. grand promenade, but at the last moment Dr. Neil 'phoned that he was unable to attend owing to illness at his home. Hence Mr. and Mrs. Patrick Kenny led the march in lieu of Dr. Neil, and this march proved one of the unique features of the ball. Mr. Kenny is a very enthusiastic meat inspector member of our Chicago Branch No. 1. The first number on the program was a waltz, "Adele," dedicated to Dr. W. N. Neil, inspector in charge of the Bureau of Animal Industry forces in the Chicago district. The sixth number on the ball program was a waltz, "Wedding of the Winds," dedicated to our president. The ninth number being a two-step, "Good Ship Maryann," dedicated to our national secretary. One feature that made quite a hit was the official emblem of the N. A. B. of A. I. E., being printed on national colors on the tickets and reception and ball programs. S. J. W.

OBITUARY.

DR. T. F. RICHARDSON.*

Friday night, August 28, at 8 o'clock, Nevada lost one of her foremost scientists through the death of Dr. T. F. Richardson, of Fallon. While Dr. Richardson was a veterinarian, he was looked up to by the members of the human medical profession as a man from whom they could learn much; a man who took pride in being posted in all things medical, no matter whether veterinary or human.

Dr. Richardson died a hero, as his death was directly due to anthrax infection, following an effort on his part to overcome an epizootic of that disease in Churchhill county. He, with several other scientific veterinarians, had recently accepted his commission as local quarantine officer for his county, to look after various infections in the stock thereof and to overcome them, if possible, and he entered into the duties of his office with the same vigor as had been invariably shown by him in all of his work. While holding a necropsy over a cow which had died of suspected anthrax, the week prior to his death, his left hand became infected while he was obtaining specimens to be forwarded to the State Hygienic Laboratory. A specimen from his own hand was forwarded to the laboratory a few days later, and Dr. Mack, the director, reported back, "Richardson specimen positive for anthrax." And thus died a man, worth while, in the very prime of life and while following his vocation in that his fellow beings might profit thereby and that humanity might be protected from possible infection. While his dealings were with the brute animals, he was as much a hero as have been those who,

* Denver *Medical Times*—Utah *Medical Journal*—*Nevada Medicine.*

in human medicine who have met with and obliterated the epidemics of the plague, yellow fever, malaria and other infections of that character. He, like them, took a chance, and died, in that not only the dumb brute might survive, but that his fellow humans might be protected.

In addition to being a scientific veterinarian, Dr. Richardson, as a hospital steward in the regular army and as operating assisting in the hospitals in Manila, during the Philippine campaign, had become well posted in human, before taking up veterinary medicine, and he had always followed the study of both sciences very closely. After leaving the service he took a course in veterinary medicine in the University of Oregon, graduating with honors. After practicing in the northwest for a short time, he located, during the boom days, in Goldfield, where he resided for several years, or until after 1907, when he relocated in Fallon, and where he resided until the time of his death. Under Governor Sparks, Dr. Richardson served as State Veterinarian for several years. He continued in this office until the legislature of the state, seeing no further benefits therefrom, abolished the office, through refusing an appropriation for its sustenance. In 1911, following an outbreak of glanders in Churchhill county, the doctor was made provisional state veterinarian and not only cared for and overcame this epizootic,. but handled those of hog cholera in Mason valley and elsewhere and anthrax in other sections. With the passage of the quarantine law, placing prophylactic work in the hands of the State Hygienic Laboratory, Dr. Richardson again retired to his private practice, in and about Fallon, which work he followed until a few weeks before his death, when Governor Oddie commissioned him as local quarantine officer to contend with such infections as might occur within the stock of his county and surrounding country.

Dr. Richardson was a man of more than ordinary energy and entered everything with an idea to win. In addition to his professional duties, he took an interest, and that more than passing, in everything occurring in his home town and country. It was he who introduced many new ideas in farming on his ranch on

the Island ranch south of Fallon. It was he who was largely instrumental in bringing about better hygienic conditions in Fallon.

Dr. Richardson was a man of pronounced political views, but not one who made enemies through the pronouncement thereof. Although a Democrat by conviction, his friends among the Republicans were legion. He never allowed politics to enter and interfere with personal friendships and would fight just as hard for the interests of a political enemy as for one of his own faith. He was a friend in whom one could depend at any and all times and those who knew him had a love for him which nothing could destroy. We who knew Dr. Richardson know that Nevada has sustained a loss which will never be regained.

Nevada Medicine extends its sincere sympathies to those who mourn Dr. Richardson's death, his wife, Mrs. Margaret Richardson, and little son, Jack.

BELGIAN QUEEN ANIMAL LOVER AND EXPERT JUDGE OF HORSES AND DOGS: Queen Elizabeth, of Belgium, who is a graduate in medicine from Leipzig, and the daughter of a world-renowned oculist, Duke Charles Theodore, of Bavaria, is said to have an expert knowledge of horses and dogs (of both of which she is passionately fond), and is a splendid whip and horsewoman. She never fails to be present at the weekly inspection of the royal stables at Laeken, when the hundred or more horses are examined by the court veterinarian. She is utilizing her knowledge of medicine at present in caring for wounded soldiers.

VETERINARIAN INFECTED ON WRIST WITH CHARBON—OPERATED UPON WITH HOPE OF RECOVERY: The Waco, Texas, *Times* of September 29 states that Dr. J. E. Warner, of that place, while vaccinating cattle had become infected on the wrist with charbon. The spot, very small at first, grew rapidly to the size of a silver dollar, when Dr. Warner consulted a physician, who made a diagnosis of charbon, and sent him to a sanitarium where the infected spot was burnt out.

SOCIETY MEETINGS.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular meeting of the Massachusetts Veterinary Association was held at the New American House, Boston, Wednesday evening, May 27, 1914. Members present were: Drs. Babbett, Babson, Abele, Cleaves, Dodge, Emerson, Howard, Kingman, Maloney, Peirce, Playdon, Seale, Wight, Winslow, Winchester and Pugh. As honored guest we were fortunate in having Colonel Borden, of Fall River, Mass.

President Seale called the meeting to order at 6.30 p. m. and requested the secretary to read the records of the annual meeting and banquet, and on motion by Dr. Cleaves, seconded by Dr. Babbett, they were accepted as read. Consideration on resolutions on the deaths of Drs. Lamb and Madden were taken, and the following committee was appointed: Drs. Cleave, Babson and Playdon.

Dr. Maloney then introduced Colonel Borden who gave a most excellent talk on the description and history of the Arabian horse—from the foundation of his breed to the present, with numerous illustrations and life portraits of the most famous of his kind. At this juncture, Colonel Borden was given a rising vote of thanks, and a buffet luncheon was served, after which the president called the members to order for a second business session, and on motion by Dr. Playdon, seconded by Dr. Babbett, it was voted that this association accept the kind invitation of Dudley P. Rogers, complimentary to Dr. Moore, to visit Weathersfield Farm at Danvers, Mass.

Dr. Peirce offered an amendment which was accepted by Dr. Playdon, and seconded by Dr. Cleaves, that the date of the visit to Weathersfield Farm be fixed by the entertainment committee.

The next subject for consideration was that of the June outing, at the Relay House at Nahant and the enjoyment of a shore dinner. Dr. Howard moved, seconded by Dr. Winslow, that Dr. Babbett be appointed a member of the already existing entertainment committee for the occasion, which the president declared a vote.

Dr. Wight said that, although contrary to the customs of the association, he wished to make a motion, which was seconded

by Dr. Abele, that members, in addition to being privileged to invite their male friends, be also privileged to invite their wives and lady friends, which was carried. Dr. Abele said that he was glad to see the reports of our meetings published in the REVIEW, and further said that by giving good entertainment we would surely have better attendance. Dr. Wight said he agreed with Dr. Abele and suggested that if any member knew of a good speaker, whether his subject be on the horse, ox or dog, he should not fail to mention him.

W. T. PUGH, Secretary.

BRITISH COLUMBIA VETERINARY ASSOCIATION.

At the annual meeting of the British Columbia Veterinary Association, held in Vancouver on the first of October, the amount of two hundred and fifty (250) dollars was donated to the general war relief fund. This action by the veterinarians of the province has created a very favorable impression, for although the organization is a comparatively young one it has proven itself in this and other instances to be one of far reaching usefulness; with its fields of endeavor by no means confined to the veterinary profession alone.

The officers elected for the current year are: President, Dr. S. F. Tolmie, Victoria, B. C.; Vice-President, Dr. J. W. Darby, Vancouver, B. C.; Secretary Treasurer and Registrar, Dr. H. W. Jakeman, New Westminster, B. C. Council: Dr. S. Ransam, Vancouver, B. C.; Dr. T. H. Jagger, Vancouver, B. C.; Dr. Geo. Howell, Vancouver, B. C.; Dr. A. J. Damman, Vancouver, B. C.

H. W. JAKEMAN,
Secretary.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION: Secretary Merillat announces the dates of the above association as December 3, 4 and 5, at Chicago; which will, as has been the custom for several years, follow the United States Live Stock Sanitary Association meeting.

DR. WEBSTER GETS ARM BROKEN: Dr. L. E. Webster, of Effingham, Ill., was thrown from his buggy and his arm broken, in the neighborhood of Watson. His horse became frightened at a passing automobile and ran away, causing the accident, is the statement of the *Republican* of Effingham, October 1, 1914.

NEWS AND ITEMS.

MAILING LIST OFFICERS NATIONAL ASSOCIATION, B. A. I. EMPLOYEES.

President, Dr. J. E. Gibson, room 10, Douw Building, 422 Broadway, Albany, N. Y.

First Vice-President, F. C. Krehl, 583 18th street, Milwaukee, Wis.

Second Vice-President, David Richardson, rooms 104-105, L. S. Ex. St. Yd. Sta., Ft. Worth, Texas.

Third Vice-President, Stephen Bray, LL.B., room 800, L. S. Ex. Bldg., Kansas City, Mo.

Fourth Vice-President, F. McCarthy, 965 Greene avenue, Brooklyn, N. Y.

Secretary, Dr. S. J. Walkley, 185 Northwestern avenue, Milwaukee, Wis. 'Phone, Hanover, 3712.

Treasurer, Lewis Donham, 1422 Lynch avenue, E. St. Louis, Ill.

Advisory Board.

Chairman, Archie A. Bryan, LL.D., 307 Harvard street, St. Joseph, Mo.

Members: Dr. J. F. Roser, 924 Chemical Building, St. Louis, Mo.; Mr. J. J. Rhodes, 2010 "I" street, South Omaha, Neb.; Mr. W. S. Pidcock, P. O. Box 232, St. Yd. Sta., Denver, Colo.; Mr. John H. McClure, rooms 235-237 Federal Building, Cleveland, O.

Organization Committee.

Eastern District, Mr. C. O. Hawkins, chairman, 621 West 54th place, Chicago, Ill.

Southern District, Dr. G. M. Predmore, rooms 211-213 Federal Building, Atlanta, Ga.

Western District, John H. Stratton, Jr., room 339, Ry. Ex. Bldg., Denver, Colo.

Northern District—Troy H. Baker, 504 East Water street, Austin, Minn.

Editor of the official organ, *The Inspector*, Mr. Frank Chaney, 2802 Duncan street, St. Joseph, Mo.

HORSE SHOW AT MADISON SQUARE GARDEN, NEW YORK, will be held this year December 7 to 11, instead of in November as heretofore. As the proceeds are to go to the suffering women, children and soldiers of Europe, it is expected that the sale of tickets will be very large.

AN AUTOMATIC COMPRESSED AIR SERUM SYRINGE OF 800 C.C. CAPACITY: The *Reporter,* Lebanon, Indiana, under date of October 3, states that such a syringe has been perfected by Veterinarians Airhart and Morrow, of that locality. We shall probably hear further particulars in regard to it, if it proves a success.

VETERINARIAN SERIOUSLY INJURED BY TRAIN COLLISION WITH AUTOMOBILE: Dr. H. C. Johnson, of Blanchard, Iowa, had his auto struck by a train, throwing him out on his head, says the *Gazette*, of Coin, Iowa, under date of October 2, and he still remained in a serious condition at the time, but getting along as well as could be expected.

J. S. GILL NAMED DEPUTY STATE VETERINARIAN—Clarksville, Tenn., September 30.—Dr. J. S. Gill of this city received notice Tuesday from Dr. George R. White of his appointment to the position of Deputy State Veterinarian. This is regarded as a worthy appointment, as Dr. Gill ranks high in his profession and is also an estimable gentleman.—Nashville (Tenn.) *Banner.*

WHEN A MAN CEASES TO BE A GENTLEMAN—A well-known race horse owner said to a veterinary surgeon: "How is it you haven't called on me for your account?"

"Oh," said the vet., "I never ask a gentleman for money."

"Indeed! Then how'd you get on if he don't pay?"

"Why, after a certain time I conclude he's not a gentleman, and then I ask him."—*Spirit of the West.*

APPOINTED ASSISTANT STATE VETERINARIAN—CANNOT GET ALONG WITHOUT THE REVIEW: Dr. Willis A. Myers writes: "I have received notice of an appointment as assistant state veterinarian of Illinois as the result of a civil service examination held recently. I do not see how I could get along without the REVIEW, and trust you will notify me promptly when subscription expires, so that I may renew without loss of an issue."

DR. KRON BECOMES A BENEDICT—Dr. Oscar I. Kron, of San Francisco, California, a graduate of the New York-American Veterinary College, was married in New York City, October 15, 1914, to Miss Augusta Alva Fischer, of that city. The editor's personal acquaintance with Dr. Kron gives us more than an ordinary interest in his welfare, and the news of his marriage is indeed pleasant. We wish him great happiness.

AN ACTIVE CANADIAN VETERINARY ORGANIZATION.—The British Columbia Veterinary Association, with a membership of sixty earnest veterinarians, is accomplishing an immense amount of good for the profession and general public in that section of Canada. At its recent meeting on October 1st, it expressed its loyalty to its nation by donating $250 to the general war relief fund.

ANOTHER VETERINARY MEDICAL ASSOCIATION: Nothing marks veterinary progress in a community like organization; and for that reason the REVIEW always takes great pleasure in announcing the birth of a new association. This last one was organized at the home of Dr. R. A. Greenwood, at Paineville, Ohio, on October 7, and is called THE ASHTABULA, LAKE AND GEAUGA COUNTIES VETERINARY MEDICAL ASSOCIATION. Veterinarians present were Dr. L. J. Allen, Geneva; Dr. T. L. Laughlin, Chardon; Dr. F. L. McCollister, Willoughby, and Dr. R. A. Greenwood, Paineville. Dr. McCollister was elected president, and Dr. Greenwood secretary and treasurer. We shall take great pleasure in giving publicity to the proceedings of the subsequent meetings of this organization, and wish them success in their efforts in behalf of the profession in their community.

To Establish Uniform Shipping Rules in Middle and Western States: The *Omaha News* of October 6 states that veterinarians from a dozen states would meet in Omaha on October 29 to establish uniform shipping rules for live stock.

Dr. Smead Goes to Rochester.—Dr. Morgan J. Smead, Port Huron, Michigan, has gone to Rochester, that State, to the Biological Farm of Parke, Davis and Co., poetically styled, Parkdale Farm.

Sour Skim Milk for Calves.*

That in summer time calves do as well on sour skim milk as they do on sweet will be interesting news to many farmers who have hitherto been kept from raising calves by the expense of keeping the milk sweet in hot weather. This expense, experiments carried out by the Department indicate to be quite unnecessary. The calves will make as rapid gains on sour skim milk. In winter, it is true, this is not quite so satisfactory. It chills the calves, and some of them drink it with great reluctance. Very young calves have even been known to refuse it altogether. On the other hand, of course, it is much easier to keep the milk sweet in winter.

In calling the attention of farmers to these facts, however, the Department at the same time emphasizes an important precaution. Unless the milk is produced and kept under cleanly conditions, it may become contaminated with disease-producing bacteria. Farmers should therefore allow the milk to sour quickly and then feed it without delay.

In the course of these experiments sour skim milk was fed to 22 calves, Holsteins, Jerseys and Guernseys, at different seasons of the year. In no case did it cause digestive disturbances even when the change from sweet to sour milk was made abruptly when the calves were only a few days old. Moreover, no evil results followed the alternate use of sweet and sour. It seems, therefore, that the common idea that sour milk leads to scours is quite unfounded.

The calves, it was found, did not like the sour milk as well as the sweet, but in the majority of cases soon became accustomed to it. The aversion, however, increased when the milk was fed them at a low temperature.

* Office of Information, U. S. Dept. of Agriculture.

Veterinary Hospital Economic Factor in Community.*

Probably the majority of people do not appreciate the important part the Veterinary Hospital at the college is filling in the community surrounding Ames. The following letter, which was sent out this summer, indicates in a small way what the hospital is doing for those who patronize it:

To the Patrons of the Veterinary Hospital, Iowa State College:

It may interest the patrons of the daily free clinic at the Veterinary Hospital to know that they are helping to supply one of the best and most varied clinics which is presented at any veterinary school in America. Last year there were 1,204 cases treated during the nine months of the school year. Of these there were 595 horses, 16 mules, 164 cattle, 280 hogs, 94 dogs, 24 chickens, 27 sheep, 2 geese, 1 cat and 1 canary.

The faculty of the Veterinary College wish, in this letter, to express their appreciation of such a splendid patronage as well as to say something regarding its plans for the future. The hospital is maintained for the purpose of giving actual instruction to the students in the care of actual cases, and with this in mind no animal is operated upon and no medicine is administered except by and under the supervision of the clinicians in charge. The clinical work is in no way experimental, as the object is to show the students the best methods of treatment. Any experimentation would therefore defeat our own purpose.

In the past, the hospital has not been completely self sustaining, although it is only fair that it should be. This is a state institution, but all the people of the state do not have the privilege of using the hospital; therefore, those who do have these privileges should meet its expenses. Heretofore, there has been no charge made for the treatment of those cases which did not remain at the hospital, although there has always been some expense. During the year, therefore, there will be no change made in the charges upon cases remaining at the hospital, but a minimum fee of twenty-five cents will be charged against those cases which are treated, but do not remain. This should mean very little to each owner, but during the year it will help the hospital fund quite materially.

Our school year opens September 14th. The clinic will be held daily between the hours of one and three p. m. If you are in need of our services, we promise our best efforts in serving you.

Yours very truly,

The Clinic Staff.

* *The Alumnus*, Iowa State College.

Federal Quarantine for Illinois Cattle.*

All cattle in five counties in northeastern Illinois will be under a Federal quarantine for bovine tuberculosis after October 1, 1914. The Governor and the sanitary officials of Illinois will co-operate actively with the Federal authorities in making this quarantine effective. The five counties affected are Lake, McHenry, Kane, DuPage and Cook.

Under the terms of this quarantine no cattle can be shipped from the five counties for dairy or breeding purposes unless they are accompanied by a certificate showing that they have been subjected to the tuberculin test and found free from disease. These certificates must be issued by an employee of the Bureau of Animal Industry, United States Department of Agriculture.

The necessity for this quarantine, which has been recognized by the State authorities, arises from the misuse on the part of a limited number of cattle owners and shippers of the privilege of inspection by private veterinarians. In some cases it has been found that health certificates have been issued for cattle which were obviously diseased. As a result, twelve States now refuse to accept Illinois cattle unless accompanied by a certificate of Federal inspection. In order, therefore, to protect the live stock in Illinois and neighboring States from the danger of tuberculosis infection it has been found advisable to do away altogether with private inspection and to place in the hands of the Department of Agriculture the regulation of the entire interstate movement of cattle from the quarantined area, and in the hands of the State Board of Live Stock Commissioners the regulation of the movement of cattle from the quarantined area to other parts of the State. With rigid Federal inspection healthy Illinois cattle will be freed from any suspicion cast upon them by the practices of the small percentage of cattle men who have misused the privilege of private inspection in the past.

The regulations governing the quarantine are contained in a Department order known as B. A. I. Order 217. Under these regulations ample provision is made for the movement under permits from the quarantined area of cattle for feeding or grazing purposes. Cattle intended for immediate slaughter may also be shipped, provided that the cars containing them are properly placarded so as to prevent the animals from being diverted to other purposes. The meat of such cattle is of course subjected to examination by United States meat inspectors. With these pro-

* Office of Information, U. S. Dept. of Agriculture.

visions it is not anticipated that the quarantine will cause any hardship to reputable owners or shippers. It is hoped indeed that these will co-operate in every way with the Department of Agriculture and the State of Illinois, both in enforcing the quarantine and in eliminating bovine tuberculosis from this region.

Imported Draft Horses No Longer Necessary.*

Enough Pure Stock of the Best Breeds Already in This Country.

Washington, D. C.—With the exception of a very limited number from England, importation into the United States of pure bred draft horses for breeding purposes has been practically stopped by the outbreak of the European war. For several years previous, from 2,500 to 4,000 stallions and mares have been brought annually into this country. In the opinion of experts in the United States Department of Agriculture, however, the standard of draft horses in America will not suffer from the interruption of these importations. There is, it is said, a sufficiently large amount of pure blood already in the country to answer all requirements and the American draft horse will now have an opportunity to demonstrate its own qualities. Hitherto a certain fascination has hung over the word "imported" which has had a marked effect upon prices. For example, an imported Percheron stallion might sell for $2,000 where an equally well-bred American Percheron would bring only $1,200 to $1,500.

We no longer go to England and Scotland for Shorthorn, Hereford and Aberdeen-Angus cattle, except to a very limited extent. The breeders of these breeds in America have and are producing the equal if not the superior of the English cattle.

There is no apparent reason why the same thing should not take place in the case of draft horses. The principal breeds of these are now thoroughly established in the United States. Their various characteristics and merits are discussed in a new bulletin published by the United States Department of Agriculture under the title of Farmers' Bulletin No. 619, "Breeds of Draft Horses." This bulletin deals with the Belgian, Percheron, French Draft, Clydesdale, Shire and Suffolk types.

Of these the Percheron probably outnumbers, in this country all other breeds combined. Grade Percherons, the product of pure bred stallions crossed with ordinary mares, have proved very popular on our markets. Of late years the Belgian has also made great strides, but this breed is still comparatively new in

* Office of Information, U. S. Dept. of Agriculture.

America. It is found chiefly in the Middle West, where the heaviest types of draft horses are prevalent. During the past ten years approximately 100 Clydesdales have been imported each year. This type is particularly well liked by those who want style and action, and in consequence is used to a great extent in cities. The Shires, though similar to the Clydesdales, are massive and less active. They are popular on the Pacific Coast and in the Central West.

England now permits the exportation for breeding purposes of Clydesdales and Shires, but it is not likely that under present conditions the importation of these breeds will be carried on to any considerable extent. As has already been said, however, experts in the Department believe that importations are no longer necessary. The bulletin describing, with illustrations, the breeds already introduced will be sent free on application to the Department as long as the supply lasts.

Proposed Harrison Anti-Narcotic Law.

The *Congressional Record* received on this date shows that the Harrison Bill conferees submitted a unanimous report to the United States Senate on Saturday, October 17th, which report was immediately agreed to without a single comment on the part of the Senate.

We anticipate that the House will concur either to-day or to-morrow, so that before the present week has passed the Harrison law will be a reality.

So far as the medical profession is concerned the Conferees have written into the Harrison bill a provision to the effect that the medical practitioner shall "keep a record of all such drugs dispensed or distributed, showing the amount dispensed, the date and the name and address of the patient to whom such drugs are dispensed or distributed, *except such as may be dispensed or distributed to a patient upon whom such physician, dentist or veterinary surgeon shall personally attend;* and such record shall be kept for a period of two years from the date of dispensing or distributing such drugs, subject to inspection, as provided in this Act."

This amendment should prove entirely satisfactory to the medical profession for two reasons: First, it does not interfere with or curtail to the slightest degree the ability to dispense. Second, it does not lay an unreasonable or oppressive burden upon the medical practitioner in dispensing. The medical practitioner is only required to keep a record of the drugs dispensed

or distributed when he does not personally attend upon the patient.

The latitude of the words "personally attend" will probably be determined at some future date in the courts. The question is, whether a physician is "personally attending" upon his patient when, after having personally and physically attended upon the patient, at some subsequent period, and in the due and proper course of practice he may send the medicine by messenger or otherwise?

The conservative construction of this provision would be that a record be kept of all dispensing or distributing when the physician is not personally and physically attending the patient. Whatever may be the construction of these provisions, the fact remains that they are entirely satisfactory to the medical profession.

When this law has been finally enacted we will advise members exactly what acts must be done both by the manufacturers, the dealers and the medical practitioner to conform thereto.

A further amendment recommended by the conferees and adopted by the Senate, exempts from the provisions of this proposed law preparations and remedies containing not more than $\frac{1}{8}$ *of a grain of heroin*, instead of $\frac{1}{4}$ *of a grain of heroin*, as formerly provided.

It is a matter of congratulation to Congress, and the country at large, that this important law will soon be placed upon the statute books. No more important legislation affecting the medical and pharmaceutical professions has been proposed by Congress than the Harrison bill.—(*American Association of Pharmaceutical Chemists.*)

Good Results from Anti-Hog Cholera Serum.*

Treatment Given by Demonstration Agents in the South Cutting Down the Loss from This Disease.

Washington, D. C. The treatment of hogs exposed to the risk of contagion from hog cholera with anti-hog cholera serum has saved all but 2.27 per cent. in the southern states, according to reports received by the U. S. Department of Agriculture from local agents engaged in demonstration work in this section.

These reports show that the county agents inoculated, in the year ending June 30, 1914, a total of 34,636 hogs that were in good health at the time, but were exposed to the disease. Of

* Office of Information, U. S. Dept. of Agriculture.

this number only 787 died. This loss of 2.27 per cent. is regarded as highly gratifying evidence of the value of the preventive treatment with anti-hog cholera serum.

Although many authorities do not recommend this treatment after the hog is so sick that signs of the disease are plainly visible, the agents in many cases took a "fighting chance." The results would seem, on the whole, to have been very satisfactory. Including sick and well animals, a grand total of 41,974 hogs exposed to the disease received the serum. Of these, 3,004 died, a percentage of loss of 7.15.

In considering these figures, scientists point out that the work was done under ordinary farm conditions, and not by trained experts in laboratories. In addition, a very large number of hogs were inoculated by veterinarians or by farmers themselves. In these cases no figures are available to show the exact results of the treatment.

Department experts also point out, however, that inoculation alone is not sufficient and does not remove the necessity for sanitary and other precautions; for example, hogs should be fed for a few days after the treatment on cooling laxative foods. They should be removed to uninfected and clean pens where there is plenty of shade, and care should be taken to free them from lice and worms. Since many hogs are worm-infested, the following formula, which has been used by local agents throughout the South with considerable success, is suggested by the Kentucky Experiment Station:

Santonin	2½ grains
Areca nut	1 dram
Calomel	1 grain
Sodium carbonate	1 dram

This is a sufficient quantity for each 100 pounds of live weight. The dose should be given in slop in the evening, after the hogs have been without food for from 12 to 24 hours. The following morning each hog should receive a tablespoonful of Epsom salts.

A Message from President Pearson.*

Welcome to all who come to help realize the lofty purposes for which Iowa State College is established!

The enrollment continues its rapid increase of recent years to such an extent that friends of the college in Ames have been

* *The Alumnus*, Iowa State College.

anxious lest there might not be suitable accommodations for all comers. But, thanks to the few who have worked long and hard on this problem and to the many who have assisted in every way possible there will be room for all. Scores of houses have been erected during the summer and many others have been enlarged. The new woman's dormitory is due to be finished at an early date. A large and first class cafeteria has been placed in the basement of Alumni Hall. If any one is in trouble in finding room or meals the Y. M. C. A. in Alumni Hall is ready and will be glad to help.

Needed relief is promised to several departments by the new Chemistry building, the Plant Propagation building and the Transportation buildings. The Board of Education has given authority for the plans for new buildings for Animal Husbandry and Science and Hospital.

But buildings and equipment do not make a college. Without the many men and women who are now gathering for a year of hard work, buildings are as empty shells. With these earnest people our buildings are a college in the largest and best sense.

The Ames Spirit includes good fellowship and when I voice these words of welcome I feel that I am speaking for each one in our community to each other one. We welcome old and new members of the faculty. They are to uphold our best traditions in teaching and in research. We welcome the old students, many of whom are already looking forward to the day when they will be called upon to use in the world's work the knowledge they are to secure here, this year.

Last, but not least, we welcome the new students and what appears to be another record-breaking freshman class, the members of which, like those who have preceded them, come from hundreds of the best homes in the states—homes where high ideals prevail and where sham and fraud are despised. The new students are entitled to more attention than others because they are now a great body of strangers. What finer welcome could they ask than that extended by the sophomore class? Nineteen hundred seventeen has put into action the thoughts of good will which everyone feels toward 1918. This new and unique attitude of sophomores toward freshmen originated at Ames a year ago and has attracted widespread notice and most favorable comment throughout the United States.

If any one is in trouble, or discouraged, he or she should remember that many persons are here who wish to help, particularly

the faculty advisors, sophomore reception committee, the secretaries of the Y. M. C. A. and Y. W. C. A. and the advisor of women. The offices of the Deans and the President are open to all.

Welcome, thrice welcome, to Iowa State College at the beginning of this new college year, and let us try to make it the best year thus far in the life of each of us.

R. A. PEARSON,
President.

GOVERNMENT SUPERVISION OVER IMPORTATIONS OF LIVE STOCK.*

In case you are a breeder of live stock and desire to import a number of animals for breeding purposes or possibly a pure-bred bull, boar or ram for the improvement of your herd or flock, it will be well to know that the Federal Government maintains a strict supervision over the entry of such animals into this country. The same close scrutiny is exercised over deer, goats or other pet animals, which foreign travelers sometimes wish to bring home as pets or as mementos of their travels.

In either case it will be advisable to defer making a purchase or engaging space for the animals on a steamship until you have ascertained just what requirements govern importations of such animals.

By Act of Congress, the Secretary of Agriculture is given authority to make such regulations and take such measures as he may deem proper to prevent the introduction or dissemination of any contagious, infectious or communicable disease of animals from a foreign country into the United States.

Under such authority, regulations of the Department of Agriculture require that any person contemplating the importation of cattle, sheep and other ruminants, and swine, from any part of the world except North America, must first obtain from the Secretary of Agriculture two permits. One of these permits, upon presentation to the American Consul at the port of shipment, will entitle the specified animals to a clearance; the other will assure, subject to inspection, their reception and entry subject to observation in quarantine at the port of entry on the date pre-

* Office of Information, U. S. Dept. of Agriculture.

scribed for their arrival or at any time during three weeks immediately following. This leeway allows for any unavoidable delay, through bad weather or other cause, in the steamer's schedule.

Three animal quarantine stations are provided on the Atlantic seaboard near the ports of Boston, New York and Baltimore for the detention of imported stock. The animals included in this regulation are cattle, sheep, goats and other ruminants, swine and collie, shepherd or sheep dogs. All animals from parts of the world other than North America are subject to this quarantine regulation. If no disease develops while the animals are detained at the quarantine station the owner is permitted to ship them to their ultimate destination in this country.

All animals of the classes named and which are subject to both inspection and quarantine must be entered through these ports.

Cattle from Great Britain, Ireland and the Channel Islands are held in quarantine for a period of thirty days. If from other countries, except those of North America, the quarantine period is ninety days, counting from date of shipment. Sheep and swine from any part of the world, except North America, are subject to a quarantine of 15 days.

The Department of Agriculture receives periodically official reports from various foreign countries concerning conditions as regards existence of certain communicable diseases of live stock. These enable the Secretary of Agriculture to determine countries from which certain animals can not be imported without danger to the live stock of the United States. No permits are granted for importations from such countries. For instance, owing to prevalence of foot-and-mouth disease and other communicable diseases in countries of the Old World and South America, importations of cattle, sheep, other ruminants and swine have for several years been forbidden from countries other than Great Britain and North America. This work is aimed to exclude communicable diseases, a number of which are unknown in this country, any of which, if introduced, would result in great loss to our live stock industry.

Persons interested may obtain the latest regulations (B. A. I. Order 209, effective July 1, 1914), on application to the Chief of the Bureau of Animal Industry, Department of Agriculture, Washington, D. C.

NOTE—This is information that a client is apt to seek from a veterinarian at any time.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alabama Veterinary Med. Ass'n	Mar. 5-6-7, 1914	Auburn	C. A. Cary, Auburn.
Alumni Ass'n, N. Y.-A. V. C.	June 10, 1915	141 W. 54th St.	P. K. Nichols, Port Richmond, N.Y.
American V. M. Ass'n.	Dec., 28-31, 1914	New Orleans, La	Nelsen S. Mayo, 4753 Ravenswood Ave., Chicago, Ill.
Arkansas Veterinary Ass'n	January 5-6, 1915	Little Rock	R. M. Gow, Fayetteville.
Ass'n Médécale Veterinare Française. "Laval"	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago	2d Fri. each month	Chicago	H. A. Smith, Chicago, Ill.
B. A. I. Vet. In. A., So. Omaha	3d Mon. each month	S. Omaha, Neb.	E. J. Jackson, So. Omaha.
Buchanan Co. Vet. Ass'n	Monthly	St. Joseph	F. W. Caldwell, St. Joseph, Mo.
California State V. M. Ass'n	December 10, 1913	San Francisco	John F. McKenna, Fresno.
Central Canada V. Ass'n.	Feb. and July	Ottawa	A. E. James, Ottawa.
Central N. Y. Vet. Med. Ass'n.	June and Nov.	Syracuse	W. B. Switzer, Oswego.
Chicago Veterinary Society	2d Tues. each month.	Chicago	D. M. Campbell, Chicago.
Colorado State V. M. Ass'n	January, 1914	Denver	I. E. Newsom, Ft. Collins.
Connecticut V. M. Ass'n.	1st Tues., Feb., 1915.	Hartford	B. K. Dow, Willimantic.
Delaware State Vet. Society	Jan., Apl., July, Oct.	Wilmington	A. S. Houchin, Newark, Del.
Essex Co. (N. J.) V. M. A.	3d Mon. each month.	Newark, N. J.	J. F. Carey, East Orange, N. J.
Genesee Valley V. M. Ass'n	2d week, July. 1913.	Rochester	J. H. Taylor, Henrietta.
Georgia State V. M. A.	Dec. 22-23, 1913	Atlanta	P. F. Bahnsen, Americus.
Hamilton Co. (Ohio) V. A.			Louis P. Cook, Cincinnati.
Illmo Vet. Med. Ass'n.	Nov. 20, 1914	E. St. Louis	L. B. Michael, Collinsville, Ill.
Illinois State V. M. Ass'n	Dec. 3-4-5, 1914	Chicago	L. A. Merillat, Chicago.
Indiana Veterinary Association	Jan. 14, 1914	Indianapolis	A. F. Nelson, Indianapolis.
Iowa Veterinary Ass'n.	Dec. 9-10-11, 1914.	Cedar Rapids	C. H. Stange, Ames.
Kansas State V. M. Ass'n.	Jan. 6-7-8, 1914	Manhattan	J. H. Burt, Manhattan.
Kentucky V. M. Ass'n.	Oct. & Feb. each year.	Lexington	Robert Graham, Lexington.
Keystone V. M. Ass'n.	2d Tues. each month.	Philadelphia	Cheston M. Hoskins.
Lake Erie V. M. Association	Pending	Pending	Phil. H. Fulstow, Norwalk, Ohio.
Louisiana State V. M. Ass'n.	Sept., 1914	Lake Charles	Hamlet Moore, New Orleans, La.
Maine Vet. Med. Ass'n.	Jan. 27, 1915	Augusta	H. B. Wescott, Portland.
Maryland State Vet. Society		Baltimore	H. H. Counselman. Sec'y.
Massachusetts Vet. Ass'n	4th Wed. each month.	Young's, Boston.	W. T. Pugh, Southbridge.
Michigan State V. M. Ass'n.	Feb. 3, 4, 1914	Lansing	W. A. Ewalt, Mt. Clemens.
Minnesota State V. M. Ass'n.	July 8-9, 1914	Northfield	G. Ed. Leech, Winona.
Mississippi State V. M. Ass'n.	1914	Vicksburg	J. D. Townsend, Louisville.
Missouri Valley V. Ass'n.	Jan. 27, 28, 29, 1914	Kansas City, Mo.	Hal. C. Simpson, Denison. Ia.
Mississippi Valley V. M. Ass'n.	Semi-Annually	Galesburg, Ill.	G. E. McIntyre, Alexis, Ill.
Missouri Vet. Med. Ass'n.	July, 1915	St. Louis	Chas. D. Tolse, Kansas City.
Montana State V. M. A.	Sept. 24, 25, 1913	Helena	A. D. Knowles, Livingston.
Nat'l Ass'n B. A. I. Employees	2d Mon., Aug., 1915.	New York, N. Y.	S. J. Walkley, 185 N. W. Ave., Milwaukee, Wis.
Nebraska V. M. Ass'n.	1st Mo. & Tu., Dec. '13	Lincoln, Neb	Carl J. Norden, Nebraska City.
New York S. V. M. Soc'y.	1915	Ithaca	H. J. Milks, Ithaca, N. Y.
North Carolina V. M. Ass'n.	June 23, 1914	Wilson	J. P. Spoon, Burlington.
North Dakota V. M. Ass'n.	Week of July 20, 1914	Fargo	A. F. Schalk, Agricultural College.
North-Western Ohio V. M. A.	Nov. 1913	Delphos	E. V. Hover, Delphos.
Ohio State V. M. Ass'n.	Jan. 6-7, 1915	Columbus	Reuben Hilty, Toledo.
Ohio Soc. of Comparative Med.	Annually	Upper Sandusky.	F. F. Sheets, Van Wert, Ohio.
Ohio Valley Vet. Med. Ass'n			J. C. Howard, Sullivan.
Oklahoma V. M. Ass'n.	Fall, 1913	Oklahoma City.	C. E. Steel, Oklahoma City.
Ontario Vet. Ass'n.	1st Week in Feb. 1914	Toronto	L. A. Willson, Toronto.
Pennsylvania State V. M. A.	March, 1915	Harrisburg	John Reichel, Glenolden.
Philippine V. M. A.	Call of President	Manila	David C. Kretzer, Manila.
Portland Vet. Med. Ass'n.	4th Tues. each month.	Portland, Ore.	Sam. B. Foster, Portland, Ore.
Province of Quebec V. M. A.		Mon. and Que.	Gustave Boyer, Rigaud, P. Q.
Rhode Island V. M. Ass'n.	Jan. and June	Providence	J. S. Pollard, Providence.
South Carolina Ass'n of Veter'ns.	Pending	Pending	B. K. McInnes, Charleston.
South Illinois V. M. and Surg. Ass'n.	Aug. 4-5-6 1914	Salem	F. Hockman, Iola.
St. Louis Soc. of Vet. Inspectors	1st Wed. fol. the 2d Sun. each month.	St. Louis	Wm. T. Conway, St. Louis, Mo.
Schuylkill Valley V. M. A.	Dec. 16, 1914	Reading	W. G. Huyett, Wernersville.
Soc. Vet. Alumni Univ. Penn.		Philadelphia	B. T. Woodward, Wash'n, D. C.
South Dakota V. M. A.	Pending	Madison	S. W. Allen, Watertown.
Southern Aux. of Cal. S. V. M. Ass'n.	Jan., Apl., July, Oct.	Los Angeles	J. A. Dell, Los Angeles.
South St. Joseph Ass'n of Vet. Insp.	4th Tues. each month	407 Illinois Ave.	H. R. Collins, South St. Joseph.
Tennessee Vet. Med. Ass'n.	November, 1914	Nashville	O. L. McMahon, Columbia.
Texas V. M. Ass'n.	Nov., 1913	College Station.	Allen J. Foster, Marshall.
Twin City V. M. Ass'n	2d Thu. each month.	St. P.-Minneap.	M. H. Reynolds, St. Paul, Minn.
Utah Vet. Med. Ass'n.	Spring of 1914	Salt Lake City.	E. J. Coburn, Brigham City.
Vermont Vet. Med. Ass'n.			G. T. Stevenson, Burlington.
Veterinary Ass'n of Alberta			C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Vet. Ass'n Dist. of Columbia	3d Wed. each month	514 9th St., N.W	M. Page Smith, Washington, D. C.
Vet. Med. Ass'n, Geo. Wash. Univ.	1st Sat. each month.	Wash'ton, D. C.	J. M. Cashell, 2115 14th Street.
Vet. Ass'n of Manitoba.	Feb. & July each yr.	Winnipeg	Wm. Hilton, Winnipeg.
Vet. Med. Ass'n of N. J.	July 9, 1914	Montclair	E. L. Loblein, New Brunswick.
V. M. Ass'n, New York City	1st Wed. each month.	141 W. 54th St.	R. S. MacKellar, N. Y. City.
Veterinary Practitioners' Club.	Monthly	Jersey City	T. F. O'Dea, Union Hill, N. J.
Virginia State V. M. Ass'n.	July 9-10, 1914	Staunton	Geo. C. Faville, North Emporia.
Washington State Col. V. M. A.	1st & 3d Fri. Eve.	Pullman	R. J. Donohue, Pullman.
Washington State V. M. A.	June, 1915	Yakima	Carl Cozier, Bellingham.
Western N. Y. V. M. A.	June 24, 1914	Buffalo	W. E. Fritz, 358 Jefferson St., Buffalo
Western Penn. V. M. Ass'n.	3d Thu. each month.	Pittsburgh	Benjamin Gunner, Sewickley.
Wisconsin Soc. Vet. Grad.	Feb. 10, 11, 1914	Milwaukee	W. W. Arzberger, Watertown.
York Co. (Pa.) V. M. A.	June, Sept., Dec., Mar	York	E. S. Bausticker, York, Pa.

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; Canadian subscriptions, $3.25; foreign countries, $3.60; students while attending college, $2; Students in Canada, $2.25; single copies, 30 cents in U. S. **Copy for advertisements should be received by 10th of month.**

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Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. **Make all checks or P. O. orders payable to American Veterinary Review.**

EXCELLENT POSITION OPEN IN HEALTH WORK is the most interesting caption of an advertisement on the opposite page. This is a nice position for an earnest, capable veterinarian fond of laboratory work, and will require prompt inquiry to secure it.

THE COACH TEAM advertised on opposite page is no doubt what many veterinarians have diligently searched for in vain in the present depleted condition of the coach-horse markets, and they will be glad to find this pair, guaranteed by a veterinarian to be absolutely sound, in addition to their other excellent qualities.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, ETC., OF THE AMERICAN VETERINARY REVIEW, PUBLISHED MONTHLY AT 509 WEST 152D STREET, NEW YORK, N. Y., REQUIRED BY THE ACT OF AUGUST 24, 1912.

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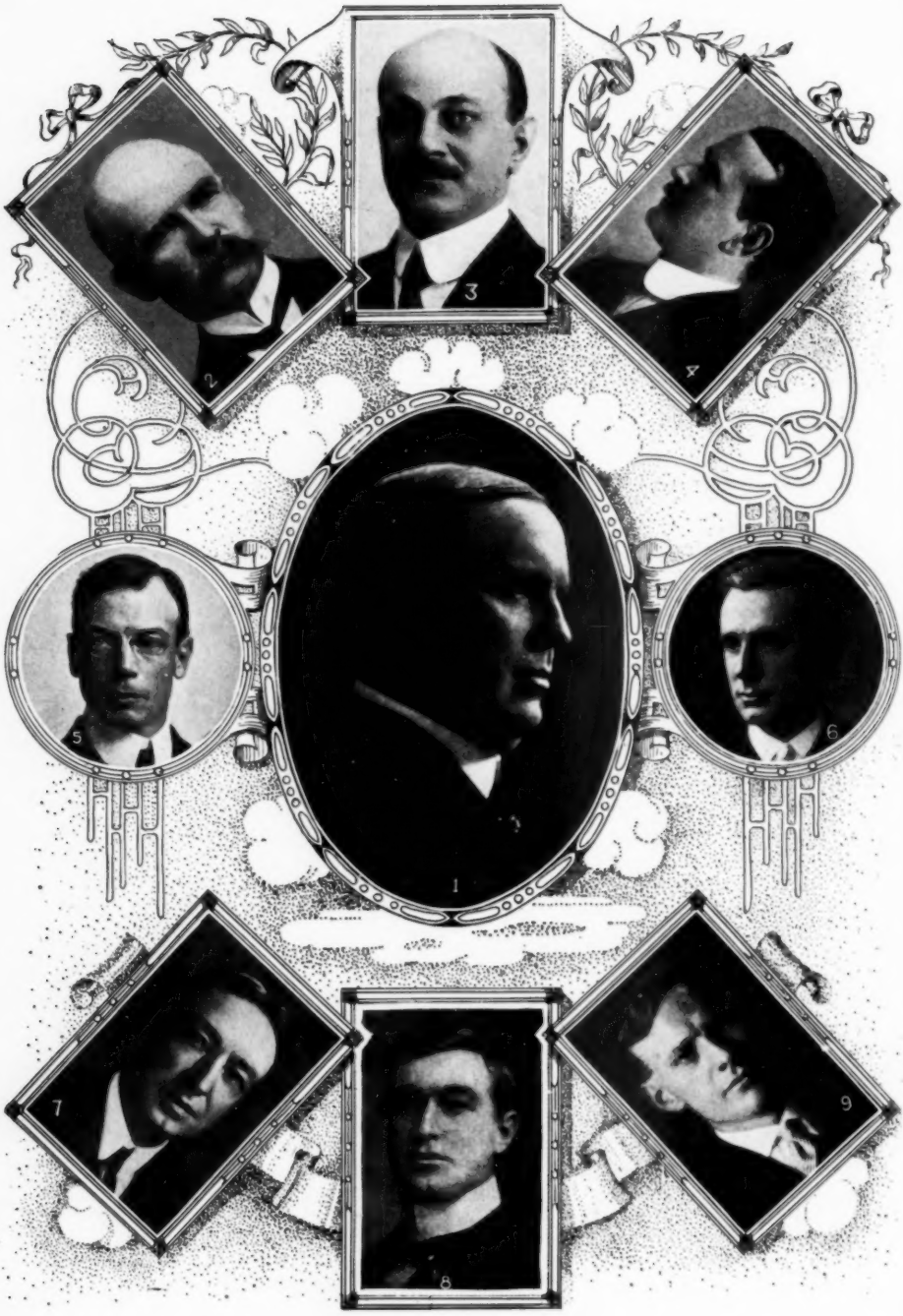
ROBT. W. ELLIS, Bus. Mgr.

Sworn to and subscribed before me this 1st day of October, 1914.

MOSES MORRIS, Notary Public,
New York County, No. 133, New York Register No. 4049.
(My commission expires March 30, 1916.)

(Seal.)



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